

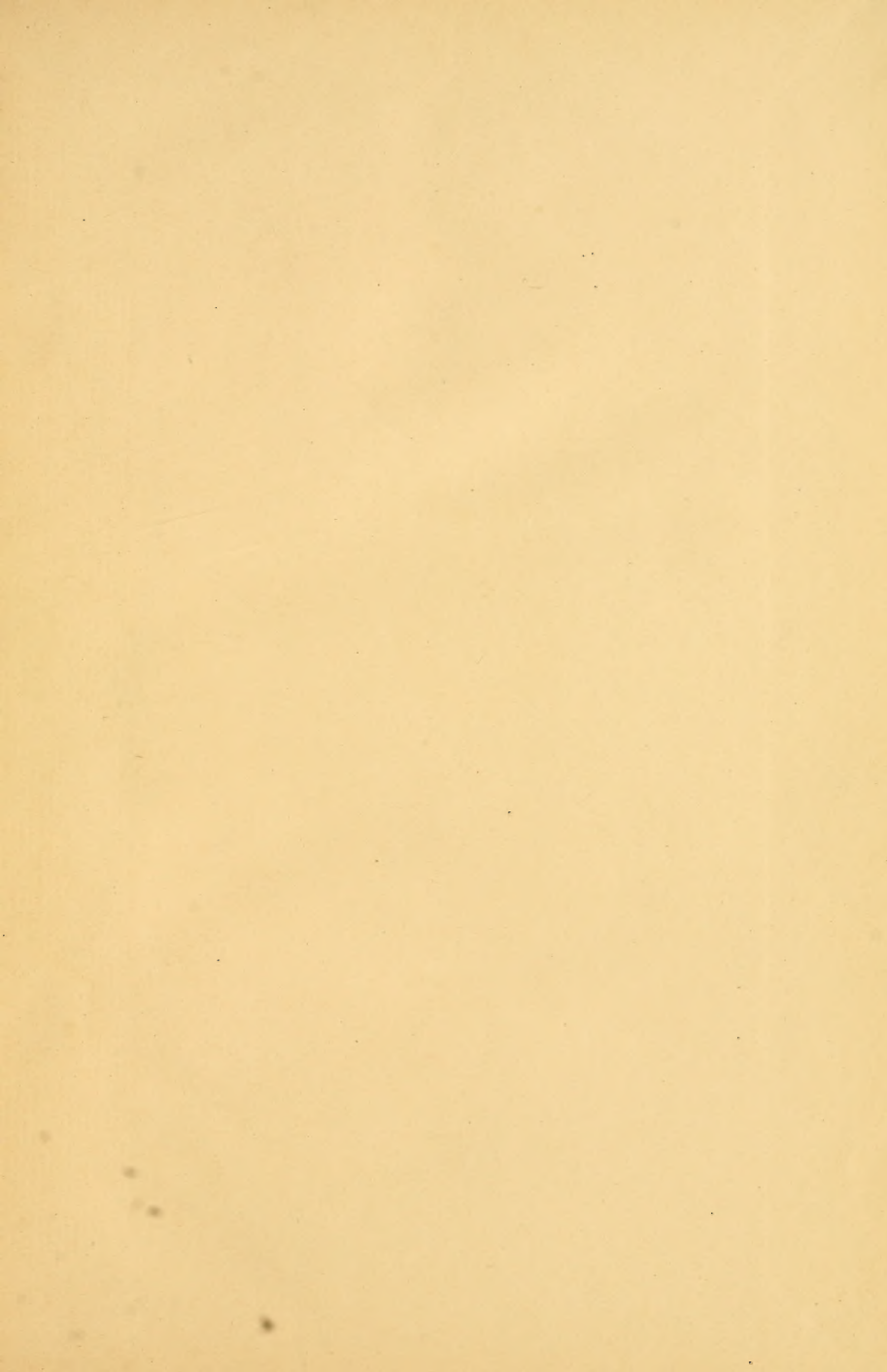


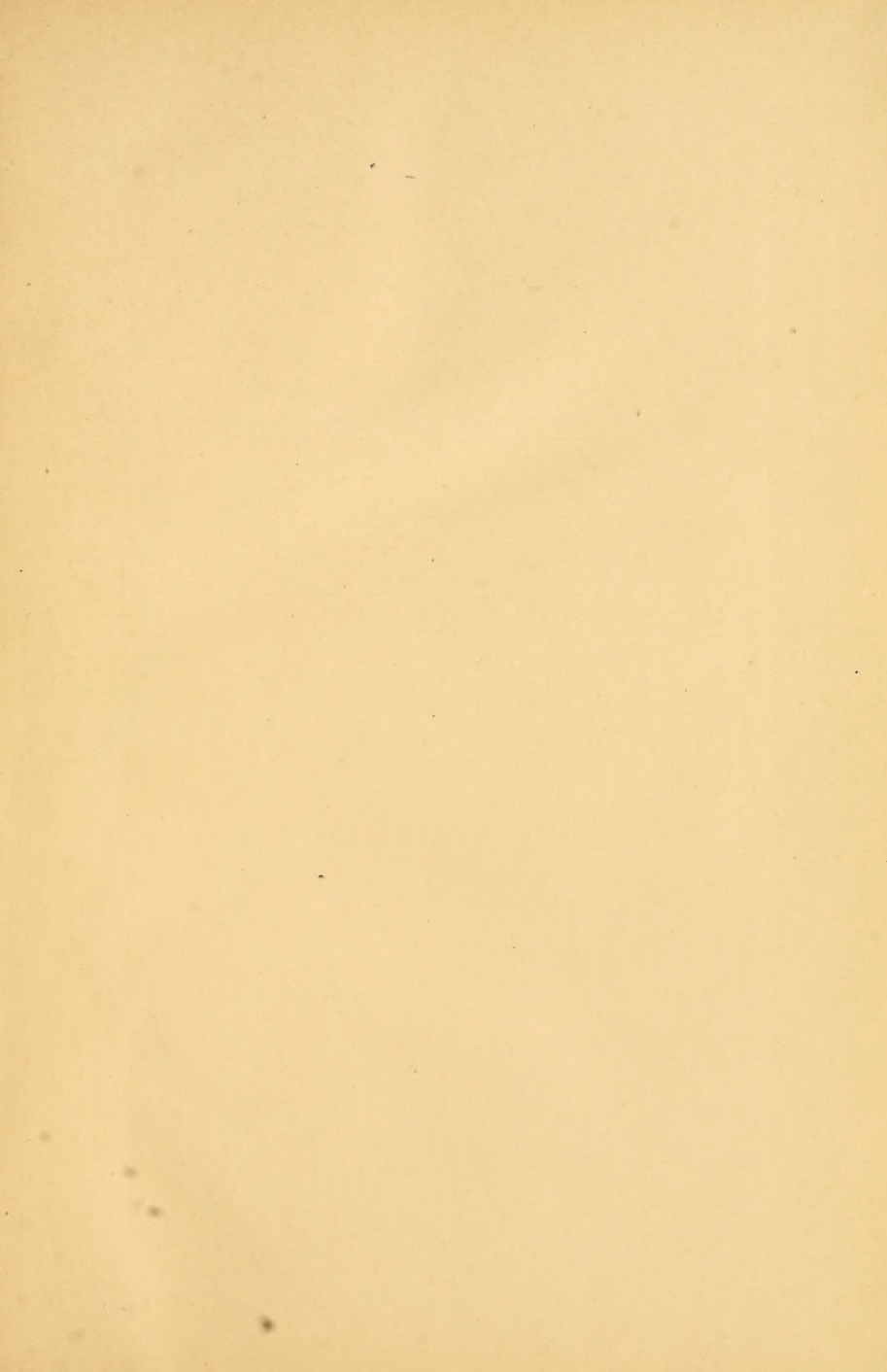
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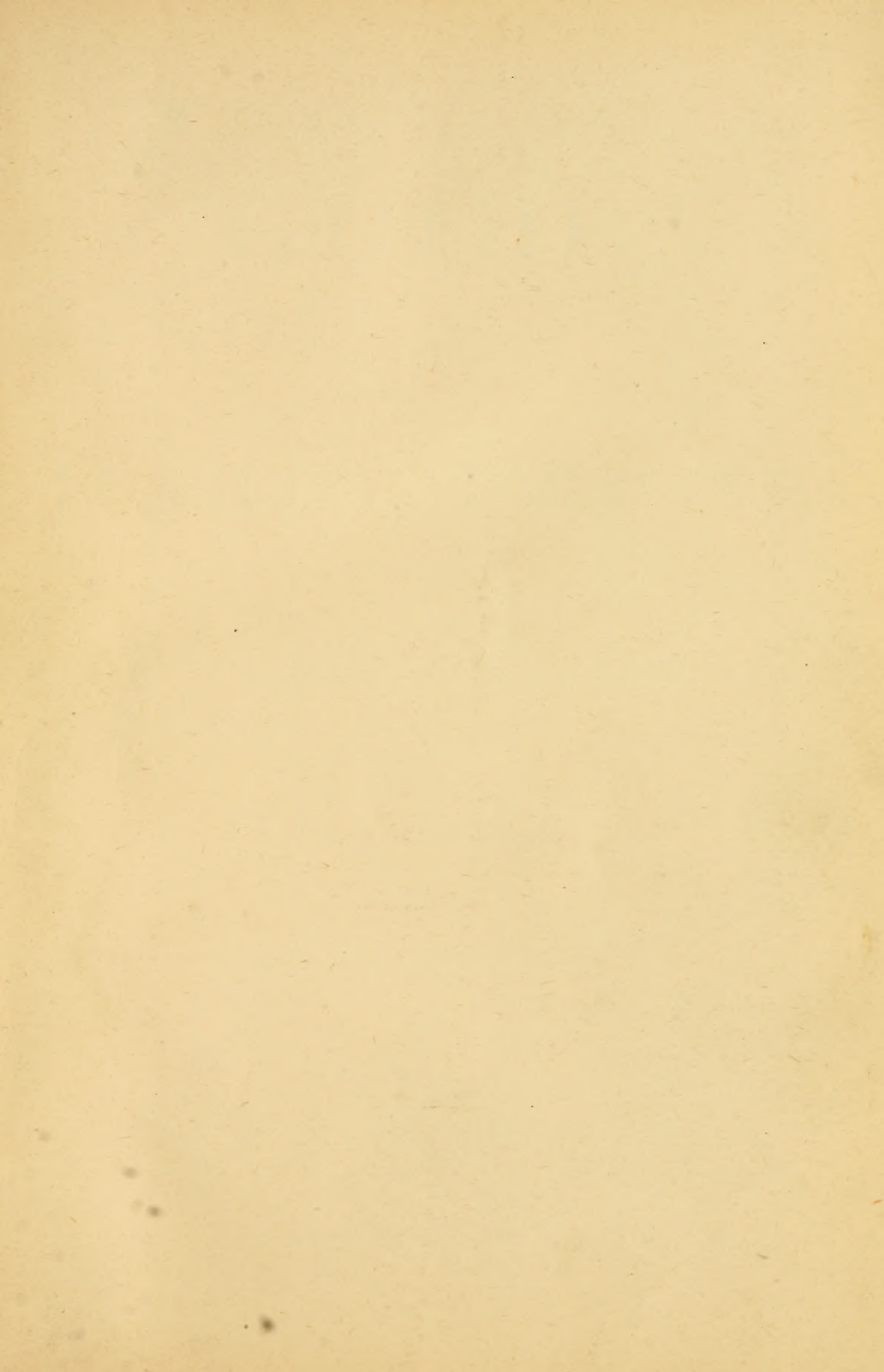
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GUIDE

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TO

HARDY FRUITS

AND

ORNAMENTALS

BY

T. J. DWYER

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DEDICATED
TO HER
WHO WAS ALL LOVE AND DEVOTION,
“MOTHER.”

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INTRODUCTORY.



THE author has been constantly associated in every conceivable way with the hardy fruits and ornamentals for over thirty years. He has thought, talked and written about them daily during that period; moreover, he has lived in their midst all this time, has handled and cared for them from the bud and scion to the fruit and flower. For some time past he has longed for an opportunity to tell the story that follows. Simple as it is, it is the result of practical experience. In the beginning of this work the author had in mind two principal motives—one to satisfy and gratify a long cherished wish to sit down and write in plain every-day language, a simple, readily understood story, to endeavor to exclude all foreign and unnecessary matter, to be brief and concise, yet to cover all essential matters relating to cultural methods. Still, personal reminiscences have occasionally crept in; they have been irresistible. Hard as I have fought and opposed them, they have at times dominated me, for the time being—luring me away from a well decided plan and purpose. If an apology is needed it is for this infringement on the reader's rights. The other motive was to be able to answer more intelligently and practicably the many letters I receive from friends and correspondents on horticultural matters. For some time past it has been a hard and laborious task to answer these letters individually. In the following pages I have tried to anticipate and supply, in a general way, what the average letter for information inquires about. For the possible mistakes and omissions the author asks your kindly consideration. My hope and earnest wish is that the reading of this book will directly or indirectly influence all to grow their own fruit and beautify their home grounds.

THOMAS J. DWYER.

CORNWALL, N Y., January 25th, 1903.

TREE FRUITS.

PREPARATION OF THE SOIL.

Land that has been previously cropped with fruits, grains or vegetables is admirably adapted to the planting of the Apple and other Tree Fruits; also land that is in sod can, with proper and persistent plowing and harrowing, be made ready and brought in good condition for planting in a short time, but no matter what the condition of your land, be it loose or in sod, the thorough preparation of it is of the primary and most necessary importance. On the perfect performance of this work in the beginning the life and future of your trees depend more than upon any other point that can possibly afterwards relate to their welfare. Plow the ground as deep as possible, and if you can do it to advantage, follow with the sub-soil plow. No matter what the depth of your virgin soil is, let your aim be to loosen the sub-soil to a depth of two or three inches below it. If the ground has previously or directly before been in sod, it should be cross plowed after it has been thoroughly worked over with the harrow. In any case, and every time the plow has been used the ground must be finely pulverized with the use of the harrow. If you have to go over the ground five or six times to accomplish this purpose, and have the soil in perfect order, you may consider it time well spent. The writer knows this from experience, and has in the past and on several occasions harrowed plots of ground as many as ten times to get them in the perfect condition they should be in before planting. In addition to the advisability of getting started right the necessity of having your land properly prepared is of paramount importance. Occasionally we have observed the practice of a few fruit growers and others who back furrow a narrow strip in their proposed orchard and plant their trees on this elevated ridge. This is a ruinous method and should not be practiced at any time or under any circumstances. To use this system of preparing the land when it is in sod is a thoroughly wrong and suicidal beginning. We should make it a rule, and never deviate from it, that no matter what the land has heretofore been cropped with, it should all of it be plowed and harrowed as prescribed above. Horse or cow stable manure or both, mixed together, may be used broadcast on the ground before the first plowing. Unless your land is in an exceptionally high state of fertility, you can safely use, and to good advantage, ten tons of this manure to the acre. In a general way this would be equivalent to ten large team loads. We will, of course, later on in this work advise the quantities and how to apply manure or fertilizer directly about the trees at the time of planting, and afterwards as they grow and develop from year to year. All the matters heretofore referred to and explained in detail under the heading "Preparation of the Soil," are applicable, singly and individually, to all the tree fruits hereafter named—Apples, Pears, Peaches, Apricots, Cherries, Plums, Quinces and Nut Trees.

HOLDING STOCK OVER.

It sometimes happens that parties are not ready to plant their trees, plants and vines as soon as received. When this is the case, the stock should be "heeled" in the ground; this is done by making a trench, placing the roots in it, leaving the tree or plant in a slanting position at an

angle of about forty-five degrees, covering the root carefully with soil and pressing the earth firmly about them with the use of the feet; then add more soil to protect roots thoroughly from the wind and sun until you are ready to plant them permanently. Trees, plants and vines, when properly "heeled" in these trenches, can be kept in good condition for several days, but they should be planted as soon as possible. However, if you are obliged to hold them over, "puddle" the roots and do it in this way; remember that it is the only right and proper method. Trees received too late in the fall for planting can be held over in this way until Spring. When this is done it is advisable to cover the tops of trees or plants with evergreen boughs, corn stalks or straw.

Stock that is received in a dry or frozen condition should be also placed deeply in these trenches, with the soil firmly pressed about the roots and two-thirds of the trunk and branches buried in the earth in this way. Twenty-four hours is the usual prescribed time to keep stock under this treatment, but three full days is none too long, and when dry or frozen stock is held over in this way for that length of time it is quite a guarantee that it will come out in good vigorous condition. When stock is excessively dry, water should be used about the roots, but in no other way. We wish that the limits of this work would permit us to go into lengthy detail about the care of trees and plants from the time they are received until permanently planted. It is of supreme importance to get them back in the soil at the earliest possible moment. If you will follow the directions given, all will be well.

HOW TO PLANT.

Where the conditions are right and suitable you can make deep furrows singly or crosswise of the field with the use of the team and sub-soil plow which will save considerable labor in the digging of the holes, and when these furrows are lined out straight and the work properly done it is decidedly the most economical and best method. Afterwards you can enlarge the furrow directly where you are to plant the trees. You will find this a comparatively small job as most of the work will have been done with the plow.

Dig the holes sufficiently large for the roots in their natural position, have the holes at least three feet in diameter and eighteen inches deep; fill in bottom of hole with rich soil and plant an inch deeper than the trees stood in the nursery row. The roots of the trees should never come in contact with the hard edge of the holes. They should have the soft soil in which to take hold of. Many trees that die are killed for the want of proper care in the preparation for planting. In fact the life and future of your trees depend largely on the care and attention bestowed on them when they are being placed in "Mother Earth." Use the surface soil directly about the roots; after the roots are well covered, firm the soil thoroughly with the use of the feet; do not place any manure next the roots. A shovel or two



of fine manure may be put in the hole after the roots are well covered with the soil; then the hole can be filled level with the surface of the ground. In the absence of stable manure you can use to good advantage five pounds of unleached wood ashes to each tree, applying one-half of it on the soil directly after the roots are covered and the other half on the surface of the ground around the tree. In case you cannot get stable manure or wood ashes you can use any of the complete makes of commercial fertilizers, such as Mapes' Fruit and Vine Manure which we have used for many years with good success. These manures can be used afterwards in large quantities according to the development and requirements of the trees. All roots of the trees that may have been mutilated with the spade or tree digger, should be made smooth with a sharp knife. This work is very important, and should not be neglected. After the trees are planted they should be properly and severely pruned back removing fully two-thirds of the wood and leader. In cutting off these branches look for a bud on the outside of the limb and cut back directly above this bud. We need hardly state that this pruning back at the time of planting is one of the most necessary and important requirements, and failure to attend to this small detail has been the direct and only cause for the loss of very many trees.

WHEN TO PLANT.

Plant your trees in the Spring as early as possible—the earlier the better after you can get your ground in proper condition for tilling or preparing the soil. You cannot do this work too early, but can easily defer it until it is too late for best results. You can plant any time during the months of March and April, and even along in the month of May when the season is late and the stock in dormant condition. Trees may also be planted to good advantage during the Fall months, any time from October 15th until the ground freezes is a good time for this work. For several years past Fall planting has been practiced quite generally. The writer has been one of its strongest advocates, and has recommended it; in fact, has planted the greater percentage of his own trees at this season of the year, and always with satisfactory results. We do not wish to say that in all cases Fall is a better time to plant than the Spring, but it is just as good a time when other conditions are equal. We do say, however, that in the majority of cases which have come under our observation, that the Fall is positively the best time. We know from many years' experience that the tiller of the soil has more time at this season to prepare his ground and do his planting than in the Spring, consequently the work will be better done. Your planting of trees should not be postponed a single day; delays along these lines are dangerous. Our advice is to always plant at the earliest possible moment. When trees are planted in the Fall it is always advisable and beneficial to "mound up" the soil about the body of the tree. This "bank of soil" should be twelve inches high, and will prevent the young trees from swaying backwards and forwards during the winter months, besides it will serve as a partial protection from the barking of the trees by field mice and other rodents. This is much better and less expensive than the old practice of staking the trees. This mound of soil must, of course, be leveled down in the spring and need not be repeated after the trees have made a season's growth and the roots have taken hold of the soil.

CULTIVATION.

We wish we were able to show clearly and plainly in this little work the absolute necessity of doing this important task at the right time and

at all times, in the best manner. Thorough tillage of the soil is bound to bring good results, and on this requisite depends the life and welfare of your trees. Clean and thorough cultivation means that you must keep your ground free of weeds at all times. It means more than this—that you must destroy the weeds before you see them. If you do this you will always, during the growing season, have your ground loose and in perfect order for the welfare of your trees. We see no good or sufficient reason to go into any lengthy detail in this matter. The plow, cultivator and harrow are to be used, and when to use them must be determined by yourself. Keep your ground loose and free from weeds and you will be sure to give the proper cultivation. The entire ground in your young orchard should be kept plowed for the first five years. You can, of course, crop the ground between the rows with strawberries, or with low growing vegetables, such as potatoes, tomatoes, beets, carrots and beans. These are most suitable crops for the situation, but if you choose you can crop the ground with corn, wheat, rye and oats; but no matter what your crop may be don't plant within five feet of the trees. Where trees are planted in sod ground, on the lawn or in other places, the soil should be kept loose about them three to four feet in diameter. It is a comparatively small and inexpensive job to cultivate your fruit trees, providing you do the work in a timely season. Don't let tufts of grass grow and develop around the trunk of the trees. We have proven conclusively and to our entire satisfaction after many years of experiments, that (excepting the peach tree) constant and persistent cultivation from year to year is detrimental to the welfare of all fruit trees. With this uninterrupted and continued tillage it is difficult to keep the trees under proper control; we are sure to stimulate them beyond their natural possibilities and as a consequence produce an excessive and inferior wood growth. Where we have such an over-abundance of wood growth the formation and development of the fruit buds is correspondingly retarded. Where there is such a superfluity of wood growth it must be removed each year by severe and necessarily injurious pruning, and this together with the bad results of over-feeding will in a few years exhaust the vitality of the trees. We have trees in our orchard at the present time dying and beyond hope from these causes. After your orchard has been tilled for five years it should be seeded down to grass for three or four years, then cultivated again as in the beginning. An alternating system of this kind judiciously prosecuted of cultivation and no cultivation will, we believe, prolong the life of the trees and one year with another give the most permanent and profitable results.

AFTER PRUNING.

This must be attended to annually with unfailing regularity; it is absolutely indispensable to success. There is no iron-clad rule that can be applied intelligently to all kinds of tree fruits, or in fact to any one kind; no two trees are just alike, nor can they be made so with the best and most approved scientific skill or management. As a matter of fact each tree has, so to speak, an individuality and formation of its own, and should be pruned accordingly. When the trees receive annual treatment, and have been brought into the proper shape by judicious pruning and attention, the only pruning afterwards needed is to remove any branches that are crossing or interfering with each other and to keep the head in symmetrical shape and well open to the sun, light and air. In neglected trees where severe pruning is a necessity, the wound should be made smooth and a coating of paint or shellac applied to protect it from the weather, and prevent decay.

The Borers should be looked after twice each year; the best time is during the months of May and September, but almost any other time will answer quite as well. The Borer is a fleshy white grub about one-half an inch in length and attacks the tree at the collar near the surface of the ground. As a rule the surface indications of the bark (resembling fine saw dust) will disclose its presence when it is readily found and destroyed. Occasionally, however, it will have worked its way some distance in the tree; then you must follow along this line with a strong wire or some other slim, stiff instrument. It is, of course, important to exterminate these Borers. Neglected, feeble growing trees or trees grown permanently in sod ground without cultivation, are much more susceptible to the ravages of the Borers than those of a vigorous constitution.

The Caterpillars—These are very annoying and destructive insects and seem to come in more or less quantities with increasing regularity each Spring. They should be destroyed at once, before they have a chance to spread and multiply, otherwise they will in a few days' time strip the tree of its foliage, the result of which, while not necessarily fatal, is of course very injurious to the welfare of the tree. You can cope with these easily and successfully if you attack them in their early stages in the Spring. The Caterpillar seems to have a special like and reverence for the apple and peach trees; they will, however, when left unmolested, build their castle in any fruit tree, "hang up their hats" and make themselves at home and comfortable.

Protecting the Trees from the ravages of mice and rabbits during the Winter months is very necessary in some localities. The remedy is very simple and easily applied. Wrap hardware paper about the trunk of the tree and coat it with coal tar; it is advisable to add a small quantity of coarse oil to the tar as it prevents it from cracking; remove the soil from about the collar of the tree to the depth of about two inches, and start your paper at that point, always filling in the soil when the work is completed. The proper time to apply this coating is in October and should remain on the tree until May.

Spraying—This is not at all times an absolute necessity, but whether or not your trees are diseased spraying is beneficial, therefore we advise it both as a preventive and safeguard and as one of the essential requirements to bring about the best results. Thorough and persistent spraying under all conditions or circumstances adds very materially to the vigor and health of your trees; it influences and helps to develop a large and rich system of foliage, which of itself is a necessary fore-runner to the largest, highest colored, most uniform and best flavored fruit. We follow with the best orchard formula spray:

BORDEAUX MIXTURE—Copper sulphate, 6 lbs.; quicklime, 4 lbs.; water, 45 gals.

The copper sulphate should first be dissolved in the water, which should be done as follows: Place the copper sulphate in an earthen or wooden vessel (do not use metal), and pour on the water occasionally until the blue crystals are dissolved. Slake the lime in 3 or 4 gallons of water; stir well, and when cooled off, strain through a fine sieve or cheese cloth into the vessel prepared for the mixture. The copper sulphate solution should always be poured into the lime. Do this carefully, that nothing may pass through the strainer which might stop up the nozzle of the sprayer. Add sufficient water to make 50 gallons of solution, and it is ready for use. Then to this add one quart of any kind of molasses, which will make it more adhesive; then dissolve

to a pasty substance one-quarter pound of Paris green and add to above, mixing all thoroughly together. This is an efficacious mixture and one that can be used advantageously at all seasons for spraying.

The first spraying should be done in the early Spring, just as the buds begin to swell; the second spraying as soon as the blossoms begin to fall. This is the most important spray of all, its principal purpose being, of course, to destroy the codlin moth, and in addition it is intended to have it cope with any other insects, or fungous diseases. It is also desirable as well as beneficial to make a third spraying about two weeks after the second. Should the leaves of your trees show rust or mildew at any time, spray at once with the Bordeaux Mixture (without the addition of the Paris green). The spray can be applied to the trees so that it may fall upon the limbs, leaves and fruit. The style of spray pump to use will depend entirely on circumstances and your requirements. For large orchard spraying the barrel pump will be the best and most economical, while for scattering small plantings and for general purposes on the private place or small diversified fruit farm, the knapsack sprayer would be the most desirable and satisfactory. We are using the Gould's make of pump and are able to recommend them.

OTHER SPRAYING FORMULAS.

The separate sprays hereafter named are to be used for many purposes. When their use is necessary on any of the trees, plants, vines or shrubs they will be referred to, and we will name the heading that will designate the one recommended.

Ammoniacal Solution of Carbonate (For Leaf Blight or Rust)—Dissolve five ounces of copper carbonate in three pints of ammonia, dilute with water so as to make fifty gallons.

Kerosene Emulsion (For Scale Insects)—Hard soap $\frac{1}{2}$ pound, boiling water 1 gallon, kerosene 2 gallons.

Green Arsenical Spray (Valuable for Leaf Roller, Slug, etc.)—Green arsenoid, 1 pound; water, 150 gallons; lime, 1 pound.

Resin Lime Mixture (For Chewing Insects)—Pulverized resin, 5 pounds; concentrated lye, 1 pound; fish oil, 1 pint; water, 5 gallons.

Kerosene and Water Mixture—For Scale Insects use a 15 per cent to 25 per cent. mixture; a 5 per cent. mixture is strong enough for soft bodied insects.

Tobacco Water—Boil stems and strain liquid, add water to make two gallons of liquid to each pound of stems used; add 1 pound of whale oil soap to each 50 gallons. Valuable spray for rose bushes and hardy shrubs.

Copper Sulphate Solution—Copper sulphate, 1 pound; water 25 gallons. For slugger on raspberry, blackberry and dewberry.

Potassium Sulphate Solution—Potassium sulphate, 1 ounce; water, 1 gallon. Valuable for gooseberry mildew.

Wash for Tree Trunks—Whale oil soap, 1 pint; slacked lime, 3 pints; water, 4 gallons, add wood ashes to thicken to the desired consistency. A preventative against insects that attack the trunk of trees.

FORMULA FOR SAN JOSE SCALE.

The San Jose Scale is a deadly fruit tree pest, minute in size, inconspicuous in color, and remarkably prolific. It often escapes notice until it is present in dangerous numbers. This insect attacks trunks, branches,

and even the fruit. If we begin spraying our trees when there is just a light sprinkling of scale there is no reason why we should not be able to keep it under control. We have been able to rid several country places of this pest, which have been under our supervision, with the following mixture: Twenty per cent. crude petroleum and 80 per cent. water, which should be applied in the early Spring just as the buds are beginning to swell; at that period the trees have a greater power to resist the penetrative qualities of the oil than during the winter months. The mixture should be applied in a thorough manner so that every particle of the tree will be reached.

THINNING THE FRUIT.

A quarter of a century ago this was practically unknown and practiced by very few fruit growers, either amateurs or professionals. Today it is considered one of the paramount and first requirements to the production of the choicest fruit grown, either for pleasure or for profit. No practical, thorough, up-to-date grower of fruit would feel that he was giving his trees the best opportunities and advantages to develop their possibilities if he omitted this important work. In fact, he would not think of neglecting this part which is so necessary in order to produce a choice number one grade of marketable fruit, and the kind of fruit that there is always a demand for at remunerative prices, almost regardless of the general market conditions. Then if our aim is to grow the finest fruit for our own use we must of necessity resort to this "thinning of the fruit." It is not as laborious or expensive a work as one would imagine from the first impulse; we have learned this from long years of varied experiences with the different tree fruits. No work in connection with your fruit growing will pay you correspondingly better than this. Apples, peaches, pears and quinces should be "thinned out," or, to be more explicit, the surplus fruit removed from the tree so that no two specimens will be nearer together than five or six inches. Plums and apricot fruit should be four inches apart. This "thinning out" should be done when the fruit is about the size of a white walnut. Peach and plum trees have frequently been killed by this excessive over-bearing of a comparatively inferior and worthless crop of fruit that under proper "thinning" would have matured a profitable crop, besides being preserved for good money-makers for years to come.

THE USE OF CLOVER.

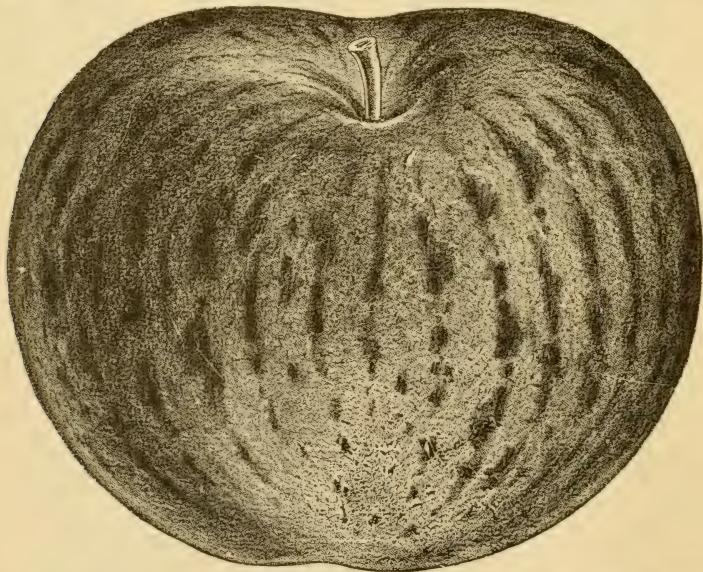
We want to advise the use of the Clovers as enrichers of the soil. We have found nothing so valuable to "bring up" worn out lands. Where one has an impoverished piece of ground that is needed for fruit culture or in fact for any crop, he can plow the ground during the months of July or August, harrow it thoroughly and with a top dressing of stable manure, wood ashes or a commercial fertilizer, seed it down with clover, firming the seed in the soil with the use of the roller. Under ordinary circumstances this clover will make a growth of ten to twelve inches in height before the end of the growing season. It can be plowed under in the late fall or early spring. This crop will add large quantities of humus and nitrogen to your land. This is decidedly the best and most economical way to enrich your soil and bring it up to the highest state of fertility. It is desirable and at all times beneficial to use the clovers as a cover crop between your fruits during the winter months. We practice this method ourselves and recommend it to all, especially among the tree fruits, as well as for Currants, Gooseberries, Raspber-

ries and Blackberries. This winter mulch or covering of clover should of course be plowed under in the early spring. The Crimson Clover is the most valuable plant to use for the purposes heretofore named. It does not succeed in all cold climates, however, but where it fails you will almost invariably find the Red Clover a valuable substitute. With the judicious employment of these Clovers we are enabled to get the largest and cleanest crops and keep our ground quite fresh and new at all times.

THE APPLE.

SUITABLE SOILS.

This "King of the Tree Fruits" will grow and, with proper care and cultivation, give good results on a variety of soils and in various climates. Most any kind of farm land that will produce a good crop of corn, wheat or potatoes is well suited and adapted to the growing of the Apple. Its favorite soils are a strong, rich loam of a limestone nature, or a deep strong, gravelly, marly loam. Perhaps the best flavored and highest



colored fruit is produced from a strong, rich sandy loam, with a gravelly sub-soil. It must be understood, however, that land with the gravelly sub-soil as above described is leechy, more or less depending on its general characteristics, consequently much more difficult to keep in a high state of fertility than ground with a clay sub-soil. It is a well-rec-

ognized fact that on the banks and interior sections of the Hudson River Valley, between New York City suburbs and Albany, there is produced in large variety a high standard of large, choice, fine appearing apples of the best flavor. The top soil along the Hudson River section varies from a light sandy loam to a dark loam, with a limestone mixture. This top soil has a body of itself from ten to twenty inches and is almost invariably underlaid with a clay sub-soil. This seems to be indisputable evidence that such land is especially adaptable to the successful production of the Apple; moreover it is a noticeable fact that the trees grow larger and live longer on this character of land than on any other.

Don't Plant Apple Trees on an excessive dry, warm soil; they may exist there for a while, but in the end it will be an all-round disappointment with money, and what is more important, valuable loss of time. Don't plant on excessively wet land, that is, land that is low and too moist to cultivate when the ordinary farm crops can be tilled to advantage. We want to warn all against planting the Apple on very low ground, even when the land is of an average dry nature; the trees never thrive well on these low lands. It is only occasionally that the blossoms escape the late Spring frosts and bear a crop of fruit. We have in this country such a varied list of soils and exposures suitable to the best cultivation of the apple that it seems like careless and suicidal indifference to select any of these uncongenial situations and destroy our chances of success in the beginning. The apple should not be planted on land underlaid with solid rock—unless the rock is five feet below the ground surface.

SUITABLE SITUATIONS AND EXPOSURES.

Most any other situation or exposure except those objectionable ones referred to above will be desirable for the apple orchard. We prefer the northern exposure, but believe when other conditions are equal that it makes but little if any difference whether or not the land is level or has a northern, southern, eastern or western slope.

The Three Systems—There are three distinct and separate ways of planting an apple orchard. All are perhaps equally good, and one system superior and more desirable than the other under different conditions and circumstances. It is, we believe, unwise to recommend any one particular rule without having a full knowledge of the situation and the aims and purposes of the planter. We therefore think best to explain briefly the methods now generally in use and let each one choose the one he finds most desirable and adaptable for his individual environments. One of the methods to adopt, and the old-fashioned one, is to plant the apple trees thirty-five to forty feet apart each way. Another system and one that has been used quite largely is to plant peach trees between the rows of apples, and also alternately in the row, removing the peach trees in a few years or as soon as they are done bearing, and then leave the land entirely to the apples. The third arrangement is to plant the apple trees twenty feet apart every way. With this plan you get one hundred and eight trees on an acre of land and under ordinary conditions will have these trees come into bearing and produce a barrel of apples each the sixth year after being planted. They will, of course, bear quite some fruit the fourth and fifth years. From the sixth year on to say about the eighteenth, they will bear many crops, large and small, without the trees interfering with one another or becoming too much crowded to hamper all-round favorable facilities in care, cultivation and gathering of the fruit. After this period the trees should be

and in fact must be grubbed out and removed as the necessity requires. In adopting this method it is of course the privilege of the planter to have these intermediate trees of summer, fall and early winter varieties, commonly called "fillers," but there is no objection in having the orchard all in one variety. This seems to be the most universally recognized, "up-to-date" system of apple orcharding. We can in truth call this intensive fruit culture. It is, of course, especially desirable and commendable where parties are hampered for land and wish to use what they have in the most practical way for the largest financial results. When other things were equal we have favored and practiced this close planting for some time, and believe we ought to admit this right here. There are many things in its favor. A man will become more interested in one hundred and eight trees on an acre of ground than he will be on thirty. He will be sure to look after their cultivation, feeding, pruning and spraying better. This natural interest will be much increased when the greater number comes into bearing and the income from them larger each fruiting year. He must have the courage to thin them out soon, as they become so large that their branches intermingle.

In naming a list of Apples we will confine ourselves to a small selection of the leading and reliable standard varieties, of course including the sorts of recent introduction that are considered valuable acquisitions. There are many other varieties that are good under special favorable conditions of soils and climates. The ones hereafter named will, we feel sure, be found adaptable to a wide range of country and suitable for our varied lay of ground and exposures. We will classify them, those for commercial purposes, and those for home use, putting each class under three separate headings, namely: Summer, Autumn, Winter. Those selected for market or commercial purposes will be principally with the view to early fruiting, size, color, productiveness and all-round market qualities, somewhat regardless of high flavor. However, this list will necessarily include some of the best eating apples. The varieties named under the heading "For Home Use" will be chosen for their high quality, ignoring quite entirely all other considerations. However, we are pleased to know that this list will embrace some sorts that are at once both desirable and profitable for both purposes.

SUMMER VARIETIES—FOR COMMERCIAL PURPOSES.



Early Harvest.—Medium size; pale yellow, early, mild, excellent, sub-acid. Ripens July 5th. Good for home use.

Yellow Transparent.—Flesh melting, juicy, and of excellent quality. Good for market and home use.

Sweet Bough.—Large, pale yellow, sweet, productive; valuable for market; ripens about August first. Comes into bearing early. Valuable for market.

Red Astrachan.—Large, roundish, nearly covered with deep crimson; juicy; a free grower and a good bearer. A splendid dessert apple, one of the best early sorts. Ripens July 20th. Good for all purposes.

Early Strawberry.—Medium, roundish, handsomely striped with red, excellent, productive. Good for cooking. Ripens July 15th. A good market sort.

Sops of Wine.—This is a late summer variety ripening about August 20th. The trees are vigorous growers and productive. The fruit

is of medium size, round and dark red, quite juicy, sub-acid and of high quality. Valuable for eating or cooking. Recommended for family use.

Summer Pippin—The trees are good, strong growers, of good form, the fruit is large and somewhat irregular in shape. Skin yellow, with a crimson blush; flesh tender and white, with a sprightly sub-acid flavor. Productive and valuable for market purposes.

SUMMER VARIETIES—FOR HOME USE.

From the preceding list the Red Astrachan, Yellow Transparent, Early Harvest and Sops of Wine are the best for the private garden.

AUTUMN VARIETIES—FOR COMMERCIAL PURPOSES.

Alexander.—Large, beautiful red, medium quality; tree a vigorous grower, very hardy. Fruit very handsome. Ripens late autumn. Fruit sells well in market. Season October to December. Good for market.

Fall Pippin.—Very large, yellow, tender, and best quality. A regular and prolific bearer; one of the best for market purposes and for the home use. A splendid dessert apple. Season from September 1st to October 15th.

Gravenstein.—Large, bright yellow, roundish, splashed with red and orange, high flavor, prolific bearer, perhaps the most profitable of the autumn varieties. Should be in every collection, whether for market or home use. Season September 5th to October 15th.

Maiden's Blush.—Medium to large, roundish; clear yellow with pink cheek, beautiful; excellent for home use.

Fameuse (or Snow).—Vigorous growth; medium, deep crimson; tender, sub-acid, melting, delicious, very good. Ripens in late autumn. A handsome, beautiful apple of medium size; one of the best dessert apples. Season, November to January. Desirable for family use.

Red Beitigheimer.—Very large, beautiful, superior quality, light yellow covered with red purplish crimson when exposed to the sun. Trees are vigorous, healthy growers, regular and productive bearers. Valuable for market. Season, mid-autumn.

Duchess of Oldenburgh.—Medium to large, Russian origin, yellow, striped with red, excellent flavor. Valuable for market. Season Sept. 10th to Oct. 10th. Trees productive.

Bismarck.—(Late Fall and Winter Apple). A variety from New Zealand. Has been thoroughly tested in the United States and Europe, and found to be productive; fruit large and quality good. The trees are of dwarf habit of growth and begin bearing the second year after being planted. The Bismarck is grown largely in large pots both for its fine fruit and for ornamental purposes. Not valuable for market.

Twenty Ounce.—The trees are rapid, irregular growers, straggling in their habit. They are productive of very large, round fruit; color, striped, rich yellowish red; a very attractive market fruit, of fair quality, especially valuable for market purposes, where it commands the highest prices. It ripens from October 1st until Dec. 1st.

Porter.—Rather large, regular, oblong, tapering to the eye; skin bright yellow, sometimes a dull blush in the sun; flesh tender, rich, sub-acid; flavor fine; fair and productive. Season Nov. 10th to Dec. 15th. Of the first quality, desirable for home use.

Autumn Sweet Bough.—Trees strong, healthy growers, and prolific.

The fruit is medium in size, conical and pale yellow; the flesh is white, tender and of the best quality. Ripens in September. A choice home variety.

Catshead.—Trees moderate, good growers. Fruit very large, round and smooth, pale green; flesh rich, sub-acid, and tender. Valuable as a cooking apple and for drying. Season, October and December. Especially desirable for home use.

AUTUMN VARIETIES—FOR HOME USE.

Of the foregoing autumn varieties we recommend for home use Fall Pippin, Gravenstein, Maiden's Blush, Fameuse (or Snow), Bismarck, Porter, Autumn Sweet Bough, Catshead.

WINTER VARIETIES—FOR COMMERCIAL PURPOSES.

Baldwin.—Large, roundish, dark red, fine flavor, sub-acid, crisp and juicy, very much esteemed. Trees grow erect and vigorous, bearing well; the great American apple that should be in every planting. Good for all purposes. Season, October to April.

Ben Davis.—Large, bright red, flesh white, juicy, rich and spicy, sub-acid, of poor quality; a popular, good keeping Winter variety. Valuable for market purposes. The trees come into bearing early and are very prolific producers; one of the best keeping apples we have. Season, October until May.

Grime's Golden.—An apple of the highest quality, equal to the best Newtown, medium to large size, yellow, productive. Valuable for all purposes. Season, November and December.

Newtown Pippin.—One of the best apples as to quality. Tree a light grower while young. Very juicy, crisp and highly delicious flavor; color yellowish green. Size medium. One of the best shippers and longest keepers. Season from November until May. Good for all purposes.

Rome Beauty.—Moderate growth; large yellow and red; tender, juicy, sprightly, sub-acid; good. Ripening December to May. Of fine appearance, making it a desirable orchard fruit.

Winesap.—Large, deep red; firm, crisp, rich, sub-acid, widely cultivated; a choice apple for home use; fairly productive. Season, November to February.

Spitzenberg (Esopus).—Medium to large; deep red; flesh yellow, crisp, sub-acid, high flavored. Bears and grows well transplanted in rich soil. November to April. Not profitable for orcharding, except where grown on specially prepared land and kept under a high state of cultivation.

King (Tompkins County).—Large, handsome, nearly red, productive; one of the best; perhaps the finest apple we grow. The trees are short lived; recommended for home use; quality very high. Season, October to December.

Lady Sweet.—A beautiful little dessert apple, fruit flat, pale yellow, with a deep red cheek; juicy, rich and pleasant. The fruit sells for the highest price in New York, Philadelphia and Boston markets. Season, November until March.

Lawyer.—Large, dark red, covered with small dots, of beautiful ap-

pearance, promises valuable for market. Trees good growers and productive. Season, November to February. A good market variety.

Mann.—Fruit medium to large, roundish, oblate, skin deep yellow when fully ripe, flesh yellowish, juicy, mild, pleasant. Trees upright growers, forming round heads. Season, December to June. For home use.

Missouri Pippin.—Medium to large; pale whitish yellow; flesh white and juicy. January to April. Good for all purposes.

Jonathan.—Medium size, red and yellow, flesh tender, juicy and rich; shoots light-colored, slender and spreading; very productive. One of the best varieties either for table or market. Trees good, strong, healthy growers, and come into bearing in a short time after being planted. Valuable for market and home use. Season for fruit from November until April.

Northern Spy.—Tree very hardy, long lived, good bearer, handsome fruit and a good variety for market or the private use; fruit large, striped with purplish red; quality of the best.

Rhode Island Greening.—Large, green, tender, juicy and rich, an abundant bearer; one of the most popular varieties for home use and market. Should be in every planting. Season from November until March.

Russet Golden.—Medium, clear golden, good bearer, of high flavor. Valuable for market; trees bear every year. Season, November to April.

Russet Roxbury.—Medium to large, tender, sub-acid flavor, very popular on account of keeping qualities. Season, January until June. Bears every year; good for commercial purposes.

Smith Cider.—Large, skin yellow, changing to red; flesh tender, juicy, crisp, fair flavor. A good variety for orcharding and for cider purposes. Season, December to March.

Wealthy.—Fruit of medium size; skin nearly covered with dark red, and of an oily smoothness to the touch; flesh white, fine grained, juicy, sub-acid; very good. Tree a free grower, productive; one of the best for the private garden. Season, December to February.

Sutton Beauty.—Fruit medium to large, roundish, handsome; skin waxen yellow, striped with crimson; flesh whitish, tender, juicy, sub-acid; quality very good; keeps remarkably well. Tree a free, handsome grower, and productive. One of the most valuable market varieties. Season, November to February.

York Imperial.—Medium, whitish, shaded with crimson in the sun; firm, crisp, juicy, pleasant, mild, sub-acid. Tree vigorous and productive. A popular variety. November to February. Grown largely for commercial use.

Fallowater.—Very large, greenish yellow, flesh fine grained, mild, sub-acid, tree vigorous. A fine variety for home use. Season, October to February.

Yellow Bell Flower.—Large, yellow, rich, sprightly, and of excellent flavor. Season, November to March. Splendid for home use.

Hubbardston Nonesuch.—Large yellow apple, striped with red, of fine flavor, a good bearer and a very valuable apple. Either for market or for home use. Season, November to April.

Dominie.—Large, greenish yellow, slightly striped with red, of fine

flavor, a good bearer and a very valuable apple. For home consumption. Season, November to February.

Stark.—Esteemed as a long keeper and valuable market fruit. Large, roundish; skin greenish yellow, much shaded with light and dark red, and sprinkled with brown dots; flesh yellowish, juicy and mild sub-acid. Planted quite extensively for large orchards. Season, December to May.

WINTER VARIETIES—FOR HOME USE.

From the preceding list of twenty-six Winter Varieties we select the sorts hereafter named as the most desirable for the home use. Baldwin, Grimes' Golden, Newtown Pippin, Winesap, Spitzenberg (Esopus), King, Mann, Missouri Pippin, Jonathan, Northern Spy, Rhode Island Greening, Wealthy, Fallowater, Yellow Bell Flower, Hubbardston, Nonesuch, Dominie.

DWARF APPLES.

These should be planted in the same way as the Standard Varieties, except that they can be planted eight or ten feet apart, then they can be set in any odd corner of the garden. They are of course more or less of a plaything and are not recommended, except, where one is cramped for room and desirous of growing some choice specimens of fruit. They don't require as much pruning as the Standards, yet it is desirable for best results to keep the heads of the trees open, and all top growth well headed back each year. Six to seven feet should be the maximum height of the tree. In the beginning when these trees are planted the branches should be left on within one foot of the surface of the ground.

CRAB APPLES.

These should be pruned, planted and cared for in the same way as the standard apples, however, as they are not near as strong and vigorous. Twenty-five feet is far enough to set them apart. They are often grown profitably for commercial purposes. Their principal use is for Jellies. We follow with a small selected list of varieties for home use and market purposes.

Hyslop.—Large, roundish, deep red with blue bloom, very pretty, flesh yellowish, excellent for cider and jelly. Popular. November, keeping late into winter.

Lady Elgin.—Similar to the Lady Apple in size and appearance, tender, juicy and good; an upright, vigorous grower early and prolific bearer. Season, September and October.

Excelsior.—Raised from seed of Wealthy in Minnesota. Very hardy, productive, and one of the best flavored varieties. Ripens in September. Nearly as large as Red Astrachan, more beautiful in appearance. Very valuable.

Transcendent.—Tree remarkably vigorous, growing to a good size, and immensely productive. Comes into bearing a little the second year from planting, bearing every year after, and producing good crops by the fourth year. Fruit very large, from one and one-half to two inches in diameter. Excellent for sauce and pies, both green and dried. The best of its class for cider, being juicy and crisp, and is also, by many, considered a good eating apple. Skin yellow, striped with red. Season, September and October.

Gen. Grant.—Large, round; yellow, striped with dark, almost black,

red on sunny side; flesh white, fine grained, mild sub-acid. Season, October.

Red Siberian.—About an inch in diameter, grows in clusters; yellow, lively scarlet cheek; bears young and abundantly. Season September and October.

Yellow Siberian.—Nearly as large as the Red Siberian; fine amber or golden-yellow color. Season, September and October.

THE PEAR.



Probably no fruit has grown as much in importance for several years as the Pear. It is now considered quite as necessary a fruit as the apple; it is right that it should be so, too, for it is a grand, luscious fruit. With judicious selection of varieties we can have the Pear for eating purposes from the first of August, until the following March,

and as a canned fruit, for the entire year. The Pear is grown largely and profitably for commercial purposes. Many large and successful fruit growers make a specialty of this excellent fruit. There is always a good demand for choice fruit of high quality which always brings remunerative prices, even when there may be a glut in the market. Pears will succeed on any ground that will produce good crops of vegetables or grain, a strong loam being preferable. The preparation of the ground, planting and other particulars are already explained in the beginning of this book. It is important that the fruit be thinned when about one-third grown, having the samples on the trees five to six inches apart. This is very essential for fine, choice Pears. Then another quite important point in the management of this fruit, is to gather them at the proper time. The fruit of the summer and autumn varieties should be gathered ten days before ripening and placed in a dark, cool place, where they will become juicy and melting, and acquire a delicious aroma and fine flavor.

The fruit of the Winter Varieties should be left on the trees as long as they keep their hold, until the leaves begin to drop from the trees. They should then be gathered and stored in some cool place. Pears handled and ripened in this way are a most delicious and health imparting fruit. Many people with impaired health, and those with stomach troubles who cannot eat apples and other acid fruits, will find a valuable substitute in the Pear. We know this to be so from many experiences. This fruit has valuable medicinal properties. The trees need liberal feeding and cultivation for the best results. These matters have been explained in detail in the opening chapter.

PROPER DISTANCES TO PLANT PEARS.

Twenty feet apart each way, is the right distance for the Standard Pear Trees. They are often planted in the orchard in connection with the small fruits like strawberries currants, gooseberries, raspberries and blackberries, using the surplus ground for the production of these fruits for several years, until the Pear Orchard is well established and into bearing then, of course, it is your privilege to use this ground for the

growing of vegetables like potatoes, beets and the like, but in no case plant within five feet of the trees. If you see signs of the leaf blight, spray for it at once with the Bordeaux mixture. As soon as you observe the first symptoms of fire blight, cut off the part thus affected at once, and burn it.

The Varieties of Pears.—These we will put under three separate headings, namely: Summer, Autumn and Winter. Those especially mentioned for home use are of the highest quality; those named for commercial purposes are selected with a view to market considerations and profit. Then it is fortunate that we have many splendid, all round va-



PEARS, STRAWBERRIES AND CURRANTS GROWN TOGETHER.

rieties that are equally good for all purposes. When this is the fact it will be so stated; like apples, there is an almost endless list of varieties, fully ninety per cent. of them having no practical value. Such a collection of different sorts tend only to confuse the prospective planter and is a source of annoyance to the well informed and experienced horticulturist. My purpose from the beginning has been to select the best and most reliable varieties, all things considered, and I shall not deviate from this intention.

SUMMER VARIETIES OF PEARS.

Osband's Summer.—Medium, yellow, with red cheek, half melting. mild and pleasant, fine flavor and excellent. Productive. Good for market or home use. Ripens in August.

Doyenne D'Ete.—Small, nearly round, yellow with red cheek, a good,

juicy, sweet pear; tree vigorous and productive. Ripens in August; good for all purposes.

Wilder.—A good grower, good keeper, good shipper, superior flavored, early pear. Fruit medium in size, smooth, pale yellow, with deep red cheek. Valuable for all purposes; ripens in July and August.

Bartlett.—Large, clear, yellow, juicy, buttery, excellent, thrifty, young, heavy and reliable bearer, too well known to need any lengthy description; one of the best fruits ever introduced. Valuable for home use and perhaps as profitable as any fruit that is grown for market. Ripens September 15th to 30th; should be in every planting.

Lawson.—One of the most beautiful when full ripe, a brilliant crimson, yellow ground; flesh is rich and juicy and pleasant. Valuable for market. Ripens in August.

Clapp's Favorite.—Large, delicious, good grower, productive. Ripens in advance of Bartlett; rots unless picked early. Should be gathered ten days before it would ripen on the trees; when properly handled a valuable market variety. Ripens about September first.

Koonce.—Medium to large; yellow, with handsome blush. A productive early market variety. Ripens in July.

Souvenir du Congress.—Fruit large to very large, resembling in form the Bartlett; skin smooth, of a handsome yellow at maturity washed with bright red or carmine on the side exposed to the sun. Flesh much like the Bartlett, having the musky flavor, though in a less degree. Ripens, September 15. Good for market use.

Tyson.—Medium size, bright yellow; cheek shaded with reddish brown, buttery, very melting; flavor nearly sweet, aromatic; excellent home use variety. Ripening last of September.

Brandywine.—Above medium, yellowish green; melting, sweet; productive. A high class fruit for family use. Season middle of August.

Manning's Elizabeth.—Small to medium; bears in clusters; crimson and gold color; very beautiful, melting, rich, sugary, springtly, perfumed flavor; excellent; very productive. One of the best early pears. Good for market or family use. Season, August.

AUTUMN VARIETIES OF PEARS.

Worden Seckel.—It is a seedling of the old Seckel. Equally as rich and inviting, while in size, color, form and appearance it is decidedly superior. Grown under like conditions we think it will average a third larger. In color, when well ripened, it closely resembles Clapp's favorite, but a little brighter red on one side, and a light golden yellow on the other, sprinkled with very faint russet dots with a skin that is usually as smooth and waxy as if it had been varnished. Recommended for home use. Season, September and October.

Idaho.—The trees are good, thrifty, strong growers. Yellow or straw color, with a faint blush or brownish red on the sunny side, thickly covered with fine brown dots, core very small, seeds few, flesh almost white, fine grained, buttery, melting, juicy, quality very good. Season September. For family use.

Kieffer.—Large, skin rich golden yellow, sprinkled thickly with small dots, and often tinted with red on one side; flesh slightly coarse, juicy and melting with a pronounced quince flavor. Tree very vigorous, and an early and great yielder; grown largely for canning, for which purpose it is especially adapted. Recommended for commercial purposes. Season, October to December.

Flemish Beauty.—A large, beautiful, sweet pear. The trees as a rule are unhealthy growers and short lived. Where it succeeds it is a valuable home pear of the highest quality. Season, September and October.

Beurre Bosc.—Large and russet yellow, flesh white, melting, juicy and sweet, productive. One of the best pears in cultivation, both for home use and commercial purposes. Should be in every collection. Season, September and October.

Sheldon.—Medium size, greenish russet, melting and juicy, highly aromatic flavor. Should be largely planted. Good for market and home use. Season, October.

Seckel.—One of the richest pears grown, usually very productive, fine grained, sweet and exceedingly juicy. The fruit is small, but is considered by all the standard of excellence. Grown largely for market purposes, and also desirable for the private garden. Season, September and October.

Duchesse D'Angouleme.—One of the largest of all our pears, greenish yellow, spotted with russet, flavor good. Its large size and handsome appearance makes it valuable for market.

Howell.—Large, light waxen yellow, with a fine red cheek. An early and profuse bearer, of fair quality. A market sort. Season, September and October. Fruit of high flavor.

Vermont Beauty.—Trees vigorous growers, early, abundant bearers; fruit medium in size, yellow, with red cheek, rich, juicy, and of best quality. Valuable for all purposes. Season, October.

Louise Bonne of Jersey.—Trees vigorous and erect growers, and most prolific producers. A large, beautiful pear of high quality; yellow, with a dark red cheek, melting, vinous, buttery and rich. Valuable for commercial purposes and home consumption. Season, September and October.

WINTER VARIETIES OF PEARS.

Beurre Clairgeau.—Very large, yellow and red, handsome and attractive; flesh yellowish; keeps sound a long time. Tree a good grower and abundant bearer. A magnificent and valuable market fruit. Season, October and November.

Lawrence.—Medium yellow, covered with round dots, somewhat buttery, with a rich flavor; should be in every orchard and garden; tree healthy, hardy and productive. Valuable for all uses. Season, December and January. At this writing, Dec. 24th, we have a basket of the Lawrence in the room in splendid condition and excellent flavor.

Beurre D'Anjou.—A large, handsome pear, greenish, sprinkled with russet, flesh white, buttery, with a high, rich flavor; very productive, and recommended for market and home use. Season, November until January.

President Drouard.—A very good looking and large winter pear, with a delicate and abundant perfume; melting and juicy. One of the longest keepers we have, therefore good for market and the home table. Season, February to May.

Winter Nelis.—Medium size, green and russet, fine grained, and when well ripened is one of the best. We have eaten this pear in March and considered them delicious. An all-round good pear; valuable for all purposes. Season, December to March.

Beurre Easter.—A very valuable winter pear; of good flavor; the

fruit is large and yellow, with red cheek; keeps all winter; especially valuable for home use.

Bar Seckel.—A cross between the Bartlett and Seckel. Tree strong, upright grower; color of fruit pale green; flesh white, fine grained, very melting and juicy; preferred by many in quality to Seckel. Recommended for the private garden. Season, November.

Vicar of Winkfield.—Large size, long, fine; rich yellow when fully ripe. Very vigorous and productive; one of the best for orcharding purposes for market. Season, December to February.

Josephine of Malines.—Medium to large, roundish; pale straw color; flesh rose-colored, melting and delicately perfumed; first quality; tree a moderate, irregular grower, with small leaves; fruit borne in clusters. This variety improves as the tree advances in age. One of the most delicious of our long keeping table pears, and it deserves extensive culture. A splendid variety for the private garden.

DWARF PEARS.

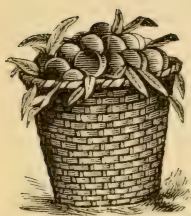
These should be planted eight to ten feet apart, and deep enough to cover the union of the stock and scion. The trees should be started with the branches one foot from the ground. They need to have the wood well thinned out each year and the leading and terminal branches kept well headed back. The maximum height of the trees should never be more than six to seven feet. Too much top growth and an over abundance of wood means short lived trees and small inferior fruit. Trees properly planted, pruned and kept under good cultivation will begin bearing a short time after being set out and will produce fruit superior in size and fully as good in every other way as the standard trees.

In fact Dwarf Pears are the only dwarf species of tree fruits that have any practical value. They are comparatively productive and good regular fruiters, desirable for very many purposes. They are particularly valuable for those who wish to obtain fruit at the earliest possible period after planting. Well grown three-year-old Dwarf Pear trees will often come into bearing the second year after being planted. The third year under favorable conditions they can be relied upon to bear a nice, choice lot of fruit. Each tree should produce from twenty-five to fifty samples, the quantity depending somewhat on the variety and the season. These dwarf trees are often used as fillers between the Standard Pears, Apples and other tree fruits. They need but little room, and can, of course, be grown and fruited in most any odd corner of the garden or grounds. The fruit should be gathered ten days before it is ripe and placed in some cool, dark room. The principal use of the Dwarf



Pear is for the home use, except in some special cases where they can be used to advantage as fillers. We would not recommend them for commercial orcharding. All varieties are not a success when grown as Dwarfs. We will follow with the names of the best for this purpose. The fruit has already been described under the heading of the Standard Trees: Bartlett, Clapp's Favorite, Tyson, Wilder, Beurre d'Anjou, Beurre Clairgeau, Duchess d'Angouleme, Kieffer, Louise Bone of Jersey, Seckel, Easter Beurre, Lawrence.

PEACH TREES.



No single family of fruits of the tree, bush and vine has grown in importance for the last ten years like the Peach. It is the fact that during this period the consumption of all fruits has increased to a greater proportion than ever before in the history of the country, and this increase is larger and more noticeable each year both in the use of the fruit in its natural state and preserved. The demand for the Peach has been far the greatest, and we cannot say that it has been fully supplied. More than ten years ago a Peach orchard of five hundred trees was quite a singular sight; at the present time most any up-to-date progressive fruit grower will fruit this quantity of trees, while in the principal Peach growing sections of the country you will find the orchards, numbering from three to ten thousand trees. Profitable results always follow the production of good Peaches, and one fact proves it. The largest and best growers are the ones who have been extending their plantations for some time past and at the present time, too. It is also an encouraging sign to see those with gardens of their own, large and small, growing their own fruit. A quarter of a century ago it was thought, and in fact decided, that Peaches could only be grown in some special favored conditions of soils and climates. To-day they are successfully cultivated and produced in all parts of the country, except in Maine, Vermont, and the Northwestern States beyond the great lakes. With a judicious selection of varieties we can have this delicious fruit in its natural state on our tables each day from the middle of July until along in October, and this privilege is possible and within the reach of all with a list of six or seven sorts that ripen at different periods of the season. As a canned fruit the Peach has no superior. There is no tree fruit as easily grown and that will come into full bearing so soon after planting as the Peach.

The Soil for Peach Trees should be prepared as previously explained in the beginning of this book. The Peach succeeds best on a sandy loam, but good results can be had from them when properly cultivated on any land that water does not lay on for any length of time after a rain storm. We should select the highest ground we have for our Peach trees. They can be grown on side hill situations quite regardless of the exposure—in fact Peaches can be produced on land that is of little value for any other crop. Our aim from the beginning must be to properly prepare and enrich our soil and plant our trees on elevated locations to give them every favorable chance and opportunity to bring the fruiting buds through the Winter uninjured.

Plant the Trees Fifteen Feet Apart Each Way.—This is the best distance, all things considered. However, on very light land they may be planted as close as twelve feet, while on heavy rich land they should be planted eighteen feet apart. We must study the character of our soil and our individual purposes and conveniences in determining the distance. If it is our intention to prune back severely each year for large and best fruit, we should plant our trees closer than we would when we

expect to give them the ordinary pruning as practiced for the average orchard purposes.

Peaches are grown far more extensively than any other single tree fruit as fillers between orchards of Apples and other fruits, the purpose being to crop them for a few years before the other fruits come into bearing, and then remove them. It must be remembered, that unlike the other tree fruits the Peach should be kept in a thorough state of cultivation at all times. From the time they are first planted until they are done bearing, the land should be kept at all times under tillage, loose and clean. The one exception to this rule would be in isolated cases where along in the last of July or early in August we found our trees making a superfluity of new wood, then we should at once prepare our ground between the trees and use the crimson or red clovers, selecting the one that best suits our climatic conditions, and seed down at once.

This will, of course, soon retard the growth of wood. The clover under normal season conditions will make a top growth of eight to twelve inches before the end of the growing season. We advise that this clover be left on the ground until early Spring, when it should be plowed under just as soon as the land is dry enough to cultivate—the earlier the better. Clover when grown and managed in this way will have served the triple purpose of retarding the excessive and injurious wood growth, as a mulch or cover crop for the land during the Winter months, and, perhaps, what is more important than all other considerations—a valuable enricher of the soil, adding to it as it surely will, the much needed humus and the all necessary nitrogen that is trapped free from the air. The writer here wishes to caution the reader against something that is quite generally unnoticed, overlooked, or entirely neglected—the guarding against this superfluous wood growth in the late growing season. Very many serious losses are solely attributable to this neglect. This new growth must be checked sufficiently early in the Autumn to give it the needed opportunity to ripen up thoroughly before freezing weather begins, otherwise the trees will go into the Winter season with an over abundance of soft, immatured wood. The whole tree will suffer accordingly and a partial or whole loss of the crop will be the ultimate result. In this connection we want to advise against the indiscriminate use of stable manure on Peach trees after the ground has been prepared and the trees planted. If used at all, and of course it can be used advantageously, it must be applied sparingly and cautiously, in order to cope successfully against the production of too much wood. In addition to stable manure, unleached wood ashes and pure ground bone, nitrate of soda, or any good commercial fertilizer rich in potash is good for Peach trees. The quantities required must be determined by the grower who is familiar with the condition of the land, and the size and requirements of the trees. If he is an observant man, in love and sympathy with his trees and solicitous of their welfare, he will, like the mother with the child that needs a little special attention, know what to prescribe and when and how to administer it without perhaps being able to give a scientific reason or explanation.

The Borers and Yellows.—These are the two greatest enemies of the Peach. The former is easily overcome by making a thorough examination of the trees regularly every Spring and Autumn and cutting out with a sharp knife the grubs, whose presence may be readily detected by the gum formed from the exuding sap. The yellows, however, is a constitutional disease which may come from many causes. For instance, it may be distributed from the original pit, from the bud, or from land where Peaches had been previously grown. One thing is certain, however, that

it is more prevalent and detrimental on trees grown under unfavorable conditions and on worn out or run down land. In its early stages of development it can be often eradicated with prompt efficacious spraying, severe pruning out and heading back of fully one-half of the whole tree. The removed parts thus affected should, of course, be burned at once. However, in the great majority of cases, especially where the disease has made any considerable headway, it is best and safest to at once dig up the tree and burn it both root and branch. This will be the surest way to guard against contaminating your other trees. It is not difficult or expensive work to cope successfully with the yellows, and no one should be hindered or discouraged in planting Peach trees on account of fear or expectation of this possible and somewhat more or less provoking annoyance. Where Peaches are grown for family use, it is desirable to plant a few trees each year—from four to twelve trees, depending on the size of the family and the quantities needed for table use and for canning. This is the safest and best method to pursue in order to secure a supply each fruiting season.

When setting out the young trees, be sure to cut off all side limbs and also cut the top off, not leaving the top or stem over $2\frac{1}{2}$ feet high; trim each year the main shoots off one-third of the last season's growth. This should be done the last of March, and for three or four years until the tree has become quite large, when the severe pruning should be stopped. Prune light after this period, removing all superfluous small and sickly branches. We must never lose sight of the fact that the fruit is produced on the previous season's growth; therefore it is of absolute necessity to keep up a good supply of vigorous new shoots over the entire tree. Spraying is of the first importance and is essential for best results. We advise the Bordeaux Formula as described in the beginning of this book. When the trees are overbearing the fruit should be thinned out when about one-quarter grown. As heretofore explained, the individual samples of fruit should be five to six inches apart on the tree. We know that to the inexperienced this will sound like radical treatment, in fact a waste of fruit. The fact remains, however, that you can get more bulk of fruit when matured from two hundred and fifty Peaches on a tree than from seven hundred and fifty—besides the lesser number of choice large Peaches will bring you five times the amount of money, and there is always a demand for fine fruit, while at times when the market is over supplied, it is difficult to dispose of small inferior fruit, and when it can be sold the prices are low, unsatisfactory and at times unprofitable. If we seem to enlarge immeasurably on this subject, it is for the purpose of trying to impress all with the advisability of leaving nothing undone to produce the choicest fruit, and of course thinning is a necessary requirement to this end.

VARIETIES OF PEACHES.



There is an almost endless assortment of Peaches; our aim is to reduce the list as far as possible to cover the entire season for fruit and make what we consider the best selection for commercial orcharding as well as for the home requirements. When the individual variety is suitable for both purposes it will be so stated; when especially desirable for market use or for the private garden this characteristic will be accordingly mentioned. Then what is perhaps of great importance and value, we will name the kinds that have proven themselves particularly

hardy of tree and buds—those sorts that we have known under similar conditions to come through an unfavorable Winter wholly or partially unharmed when the fruiting buds of tender and more susceptible varieties have been Winter killed in whole or in part.

Elberta.—Large, yellow with red cheek juicy and of high quality, flesh yellow and melting. A very valuable sort. One of the most reliable standard varieties we have; a profitable, magnificent yellow variety; is now being planted heavily by large fruit growers for commercial purposes. Should be on every list of Peach trees. Ripens in September; and is a free stone and hardy of bud; desirable for all purposes.

Chair's Choice.—A late yellow-fleshed variety; very beautiful and desirable; of largest size; deep yellow with red cheek; freestone, flesh firm and of best quality; desirable as a dessert fruit and for canning; another profitable variety, and a good companion for the Elberta; ripens in September; free stone and buds hardy; valuable for market use.

Stump the World.—Very large, skin white, with bright red cheek, flesh white, juicy and good. Last of September. An old, reliable white variety and most desirable mate for the Stephen's Rareripe; freestone, hardy of bud, and desirable for all purposes.

Stephen's Rareripe.—Large, white fruit resembles an enlarged Old Mixon Free, of the highest color, very productive and free from all disease. This is perhaps, all things considered, the best late white Peach we have to-day. A large, beautiful fruit of the best flavor and appearance, deserving of all the praise bestowed on it for the last few years and growing in favor each season; ripens middle of September, and is a freestone and hardy of bud; valuable for all purposes.

Crawford's Early.—Very beautiful, and one of the best yellow Peaches for market purposes, fruit very large, oblong, skin yellow, with fine red cheek, flesh yellow, juicy, sweet and excellent, wonderfully productive. Last of August; valuable for market; buds not as hardy as some other varieties; freestone.

Bear's Smock.—Fruit medium to large, skin light orange yellow, mottled with red; some specimens dry, others moderately juicy, rich, a good late market sort. Ripens last of September; buds hardy; freestone. Valuable for all uses.

Crosby.—The fruit is of medium size, roundish in form, slightly flattened, bright orange yellow, beautiful appearance. It ripens September, 15; sets a quantity of fruit and must be severely thinned; buds the hardest; valuable only for market purposes; freestone.

Carman.—Large, resembles Elberta in shape; color creamy white or pale yellow with deep blush; skin very tough, flesh tender, fine flavor and quite juicy. Ripens with Early Rivers. One of the hardest in bud; in shipping qualities and freedom from rot it is unsurpassed. Ripens in August and needs severe thinning; valuable for all purposes; freestone.

Lovett's White.—A very late white Peach freestone and handsome; color pure white, very large, flesh firm and sweet. Ripens last of September; one of the choicest fruits for the home orchard; fruit luscious; buds tender in some localities.

Wonderful.—A new variety, color rich golden yellow, freestone, of large size, wonderfully productive. Ripens last of September; a fine market variety; buds hardy.

Salway.—Large, yellow, mottled with red cheek, a valuable late va-

riety. Ripens October 15; good for home use; buds rather tender; a light bearer.

Triumph.—Above medium; skin downy, dark orange yellow; nearly covered with dark carmine; flesh yellow, juicy, melting and slightly subacid; quality good where it succeeds, valuable for market and home use on account of its extreme earliness; the fruit in many places splits open when matured; buds hardy and trees vigorous growers; semi-clingstone.

Crawford's Late.—Fruit of the largest size, skin of greenish yellow, with dull red cheek, flesh yellow. One of the finest late sorts. Last of September; buds rather tender, but where it succeeds one of the choicest sorts for home or market use; quality of the best; freestone.

Globe.—A very rapid grower and an enormous bearer, fruit very large, flesh firm, juicy, yellow, shaded with crimson, very rich, luscious. September and October; an attractive fruit for all purposes; buds rather tender; freestone.

Keyport White.—Medium to large, pure white, white flesh through to the stone. Tree a good grower, productive and valuable. Ripens last of September; valuable for all purposes; buds hardy; freestone.

Mountain Rose.—One of the best and most reliable Peaches, large white, flesh white, sweet productive. Early August; should be in every planting; a beautiful semi-cling stone; buds hardy.

Old Mixon Free.—Uniformly large, white covered with bright red; one of the best and most reliable. Last of August; valuable for orchard purposes for market; buds hardy; freestone.

Fox's Seedling.—A very valuable Peach, large size, fine quality, white flesh, freestone, beautiful red cheek. Ripens October 1; not a productive variety; its chief value is for home use; buds rather tender; freestone.

Champion.—Probably the best early white Peach, all things considered. Trees hardy and productive, fruit very large, rich and luscious in flavor, white, with red cheek. Ripens middle of August; a valuable fruit for all uses; buds very hardy; freestone.

Morris White.—Medium; straw color, tinged with red; juicy and delicious, productive. Middle of September; valuable only for home use; buds rather tender; freestone.

Brays Rareripe.—Large size, oblong or oval; white flesh, freestone; fine grained, with beautiful red cheek. Ripens September 15; a good average bearer, and desirable for market purposes; buds hardy; freestone.

APRICOT TREES.

Where this fruit can be grown, in some few favored localities and in some especially sheltered warm gardens it is a great success and an interesting valuable fruit, coming into bearing a short time after being planted. We cannot, of course recommend it for planting in the Northern and Middle States, except under the favorable conditions referred to above. The writer has fruited it in a small way in his garden, here on the banks of the Hudson River Valley, and has at the present time

some very promising young trees; these are grown in an Apple and Peach orchard, and are of course, more or less protected. We advise the inexperienced to experiment with the Apricot first in a small way. They should be planted fifteen feet apart each way; planted and treated in the same way as the Peach. If the curculio attacks the fruit, treat it the same as for the Plum.

The Varieties that follow are the best and hardiest and can of course to be used for all purposes, both for market and the home.

EUROPEAN VARIETIES OF APRICOTS.

Acme.—An early bearer of large and good fruit. Fruit yellow, with red cheek. Ripens in July.

Early Golden.—Small; pale orange; flesh orange, juicy and sweet. Tree hardy and productive. Ripens beginning of July.

Breda.—Small, round, orange flesh, juicy, rich and vinous; hardy and a good bearer. Ripens last of July.

Moorpark.—Very large, orange, with reddish cheek, flesh orange, sweet, juicy with a fine flavor; a very valuable variety. Ripens beginning of August. Very extensively planted for home use.

RUSSIAN VARIETIES OF APRICOTS.

are valuable acquisitions and are quite distinct from the European varieties. Their leading characteristics are extreme hardness, early bearing, productiveness, and freedom from disease.

The following are the best that have been thoroughly tested:

Alexander.—An immense bearer. Fruit yellow, flecked with red; very beautiful. Ripens in July.

Alexis.—An abundant bearer; yellow, with red cheek; slightly acid. Ripens in July.

Catherine.—Vigorous and productive. Medium sized, yellow, mild, sub-acid. Ripens middle of July.

Gibb.—Tree grows symmetrical; productive. Fruit medium, yellowish, sub-acid; the best early variety, ripening soon after strawberries. About July 1.

J. L. Budd.—Tree a strong grower and profuse bearer. Fruit white with red cheek; sweet; the best late variety. Ripens in August.

PLUM TREES.

The ground should be prepared for these, the same as for the other fruit trees, such as Apples and Pears, and as fully explained in the opening chapter of this book. The Plum is very important, valuable and profitable when properly grown. There is always a good market demand for a high grade of this desirable fruit. With a judicious selection of varieties, proper pruning, spraying and thinning of the fruit, one can produce the Plums quite as successfully and cheaply as the Peach. For the last few years past the orchard cultivation of this fruit has received a stimu-

lus with the introduction of the Japan varieties. We therefore, for the benefit of our readers, think best to divide the Plums into two separate classes, namely: The European and the Japan Varieties. In selecting varieties from both these families, we will not deviate from our original purpose thus far faithfully adhered to with all the fruits we have written about. To cut down the list of varieties as far as possible and practicable, without omitting any sort that is reliable and valuable under varied climatic conditions in any section of the country where the fruit can be produced. We have a great surplus of varieties of all fruits, many of them having only a local value near their origin, or where grown under some special favored conditions and treatment; then we have many others that are quite valueless no matter where grown. These should never have been put on the list in the beginning, but should now be discarded at the earliest possible moment. Then such a voluminous list of good, bad and indifferent varieties serve only to confuse the beginner or amateur fruit grower, besides being a constant source of annoyance to the professional. The writer has for many years past in his semi-annual publications and writings strongly advocated the cutting down of this unnecessary and inexcusable long list of fruits, the complete and entire weeding out and destruction of these needless inferior sorts. We are pleased to observe for some time past the tendency in this direction by many leading nurserymen, authorities on horticultural matters, and even the best and most progressive up-to-date fruit growers, especially those who are in the business for commercial purposes are confining their plantings to a few of the leading, trustworthy, standard kinds. The disseminators and introducers of new fruits are public benefactors and their work is at all times commendable. However, when after a fair trial a new fruit proves a failure it is a duty and a blessing to all interested to discard it promptly.



PLUMS--JAPAN VARIETIES.



This comparatively new family has revolutionized plum growing for some years past. They are in many essential ways different and preferable to our European sorts. The trees are hardier and will endure neglect and unfavorable situations better; they are stronger and more vigorous growers, much more productive, and as a rule, will come in to bearing from two to four years earlier. The fruits average consider-

ably larger, carry and sell better in market. They are superior for canning and fully as rich in flavor, consequently just as desirable as a desert and in its natural state. We have fruited several hundred trees during the past three years, and it was a common occurrence to pick half a bushel of choice fruit from three and four year old trees of Abundance, Burbank and other varieties; this, too, after we had thinned out two-thirds of the fruit from the trees. This thinning is of absolute necessity to get choice fruit and to keep the trees from breaking down with an overload of fruit. The fruit should be thinned when it is about the size of a walnut or about one-third grown. To get the best fruit and avoid rotting, no two specimens should touch each other at any time.

Pruning.—This must be practiced yearly with a heavy hand. In fact it is next to impossible to get the average horticulturist to cut back these trees as they should be treated. As before stated, they are rampant growers, and such sorts as Burbank will make a wood growth of from six to twelve feet each season. If this is not kept in check it will soon make a large tree that will exhaust itself trying to mature a superfluous quantity of fruit, inconsistent with its age and capabilities. Then this heavy annual pruning and heading back, is of itself somewhat detrimental to the welfare of the trees; therefore, in the case of these Japan Plums, we would suggest and advise Summer and early Autumn pinching back of the leading and lateral branches; just when and how to do this must be determined by the variety and the growth it has made.

Fertilizers—The best food for these Plums is that heretofore recommended for the peach; unleached wood ashes, nitrate of soda, pure ground bone and any good make of complete fertilizer. Stable manure can be used sparingly, otherwise we will get an over-abundance of wood.

Spraying—This should be properly looked after, using the Bordeaux mixture as heretofore recommended. Spraying and thinning of the fruit is of primary importance, as they both are necessary as preventatives to the rotting of the fruit, especially in moist and otherwise unfavorable seasons. We want to urge the advisability of heading these trees quite close to the surface of the ground, not over two feet, or about the same as the Peach tree. This method, is of necessity to make the trees strong, solid and bulky near the roots, to prevent injury from high winds, heaving, overbearing and other causes.

Distance Apart—For commercial orcharding, Plum Trees should be planted twenty feet apart each way. In the home orchard they may be planted twelve to fifteen feet apart. By a little extra pruning back they can be fruited at these distances for a number of years, and in fact indefinitely without interfering. By keeping them in semi-dwarf state we will get large, choice fruit.

The Right Soil.—The Plum will grow and thrive on a great variety of soil, but as a matter of fact it attains its greatest perfection on heavy, loose, pliable land. It is a fact that the trees live longer and bear longer and more regularly on this character of ground. The Japan Plums have never failed us on any soil, and we have grown and fruited them with satisfactory results on all kinds of land, except the pure sand. The trees will not thrive on wet ground.

Black Knot—This is one of the Plum's greatest enemies. Happily the Japan Plums are not as susceptible to it as the European varieties, in fact the writer's trees have been quite immune from it, yet we find that occasionally it does attack the Japan varieties. The only way, of course, to cope with this disease is to cut off, remove and burn the parts thus

affected as soon as the knot is perceptible. Be sure to cut some distance say three or four inches, beyond the visible trouble. The Black Knot is a rough swelling of the wood, obnoxious looking, readily discernible and easily eradicated when taken advantage of in its early stages of development. For several years before the introduction of the Japan Plums, this disease was so prevalent on the European Family of Plums, that their cultivation was quite generally abandoned, except by a few of the large fruit growers throughout the country and especially in Western New York, where the production of this fruit is one of the leading industries. However, a better and much more encouraging feeling exists to-day, and the Plum is grown more largely than ever before in the history of the country. A good preventive against Black Knot is thorough cultivation. Trees that are neglected are quite generally infested with this fungous growth.

The Curculio—This is another enemy of the Plum, fortunately, however, this can be easily and cheaply controlled. It is a small, dark brown beetle that stings the fruit, causing it to drop from the trees. When the trees blossom, and as the fruit begins to set, dress the ground about the Plum trees, make it very clean and smooth. Then, as soon as the Curculio commences its operations, spread a large sheet prepared for the purpose around each tree, and jar it so as to shake down all fruits that have been stung, as well as all the Curculios. Both insects and stung fruits should be destroyed. This work is performed daily, and ensures a full crop. The work is done quickly; a dozen trees in a garden can be attended to daily in less than half an hour's work of a man. Let those who really desire to grow fine crops of delicious Plums try this system, and follow it up rigidly, and they will be successful.

You will find this insect much more prevalent some years than others. It is not at any time a difficult job to cope with it.

JAPAN PLUMS—LEADING VARIETIES.

America—One of Luther Burbank's introductions. Fruit described as very large, glossy coral-red; flesh light yellow, moderately firm; best quality. Ripens about August tenth and is a splendid keeper.

Abundance—It is exceedingly hardy. Its propensity for early bearing is such that before it leaves the nursery row the limbs bend with the weight of fruit until they sometimes break, and this is the case every year—the curculio having no effect upon it; the fruit is large, showy and of a beautiful amber shade. One of the very best varieties; fruit rich, sweet and a splendid dessert fruit. Ripens August first to fifteenth.

Burbank—The fruit is usually from five to five and a half inches in circumference, and varying less in size than other Japan plums, nearly globular; clear cherry red, with a thin lilac bloom. The flesh is a deep yellow color, very sweet, with a peculiar and agreeable flavor. Valuable for preserving. Ripens August twenty-fifth to September tenth.

Bartlett—The introducer, Mr. Burbank, describes it as follows: "Bartlett is the king for flavor; it out-Bartletts the Bartlett pear in exquisitely perfumed flesh, bears when two years old." Light salmon colored flesh, rather firm, yet juicy. Seed medium size, long, flat, semi-free. Ripens August fifteenth.

Berckmans—(Botan)—Large, round, slightly oblong, sometimes verging to heart shaped; skin yellow, overspread with bright red and light purplish bloom; flesh yellow and of good flavor; cling; an exceptionally good keeper. Ripens about September first.

Chabot.—Fruit large, about two inches in diameter, oblong-conical; skin pink-red, with many very fine gold dots; flesh yellow, very solid, rather acid, quality very good. cling. Ripens early in September.

Chalco.—Tree a tremendous grower and unsurpassed in productiveness, hardy. Is large, flat, deep reddish-purple; flesh yellow, very sweet, rather firm, exceedingly fragrant, seed small. Like the Apricot Plum the fruit is almost stemless and completely surrounds the older branches. A superior shipping sort. Ripens August twentieth.

Climax (As described by Luther Burbank)—Fruit heart shaped, as large as Wickson and more highly colored, so fragrant that a whole house is perfumed with a single fruit; delicious as could be desired or imagined, and above all, it ripens here July. fifteenth. Tree extremely vigorous, rather upright growth with strong branches, prominent buds and very large leaves, the picture of hearty vigor.

Hale.—One of the finest of the Japanese plums in quality, and remarkable for its vigor and productiveness. The plums are of the largest size of its class, bright, orange-yellow skin, mottled and nearly covered with vivid cherry red, exceedingly attractive and beautiful; flesh yellow, firm and delicious. It is an early and regular bearer, bearing each year enormous crops. Ripens about the middle of September after the early peaches and other Japan Plums have done bearing, and keeps in good condition a long time after being picked.

October Purple.—A very valuable Japan Plum and latest of them all. Mr. Burbank of Santa Rosa, Cal., has originated a large number of new Plums. "The October Purple," Mr. Burbank pronounces "The Best of Them All." "The October Purple is a splendid grower, ripens up its wood early to the tip, bears every season; fruits all over the old wood on spurs, instead of away out on the branches like many other kinds. Fruit very large and uniform in size. It is a superb variety." The fruit is round in form, color a reddish-purple, flesh yellow, stone small, and in quality superb. The tree is a strong, erect grower, forming a nice shapely head, more like the Abundance in this respect. Its season of ripening is from the middle to the last of September. Its large, even size, and beautiful color, late season in ripening, long keeping and superb quality, make it a desirable variety for the garden or for the market. A large, handsome, late plum of the choicest flavor.

Ogon.—A handsome, very desirable Japanese Plum. Large, nearly round, of a bright yellow with a faint bloom; flesh firm, sweet, rich and dry. Excellent for canning. Ripens last of July.

Red June.—Tree a strong grower, productive as Abundance. Fruit medium to large, deep vermilion red, with handsome bloom, very showy; flesh light lemon yellow, slightly sub-acid, of good and pleasant quality; half cling, pit small and is the best in quality of any of the early varieties. Ripens about July twenty-fifth. Of fine rich flavor.

Satsuma.—A purple fleshed plum from Japan, of vigorous growth, with rank, dark green foliage enormously productive of fruit; large and handsome. Pit but little larger than a cherry stone. Fruits at two or three years of age. One of the most valuable of Japan Plums. Quality of the best. Ripens about September twenty-fifth.

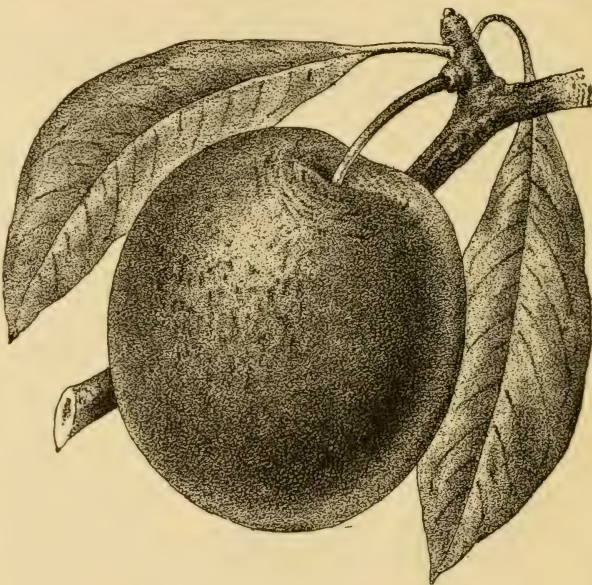
Shiro (As described by Luther Burbank.)—"The fruit which is produced in the utmost profusion, is medium to large, very uniform in size, clear light yellow, with an almost imperceptible thin white bloom and so transparent that the pit can be seen through the flesh, which is firm yet juicy, rich, pleasant sub-acid. Ripens about August fifteenth.

Wickson.—A remarkably handsome and very large, deep maroon-red

Plum. Long-cordate, or oblong pointed; flesh firm, deep amber yellow. clinging to the small pit. Of first quality. An excellent keeper. A cross of Burbank with Kelsey, Burbank furnishing the seed. Ripens middle of September. One of the best Plums in cultivation.

PLUMS FOR PROFIT.

The author has for several years fruited many varieties of the Japan Plums in a large way, having several hundred trees under cultivation. They have been a satisfactory and profitable crop at all times. Our profits from them have been as large as from any fruit grown. However, we find that the future of this family of fruit is an undecided and unsettled problem among fruit growers. Many good fruit growers who have fruited them successfully and profitably, have optimistic views for their future, and are planting them largely, thus proving their faith in them. Then on the other hand we meet growers who are extremely conservative about planting them to any extent, if at all, seeming to think that ere long the market will be glutted with them when the season is favorable for their fruiting; that when they rot badly in seasons of excessive rains, the crop is so light that



ABUNDANCE.

they will be unprofitable. We have faith enough in the Japs to continue planting and fruiting them consistently with the other tree fruits, but not exclusively of them. Perhaps we can better and more forcibly explain by stating that we would plant them in one-half the quantities of the Peach, and this rule would hold good both for commercial orcharding and for the home garden.

EUROPEAN PLUMS.

These should, like the Japan sorts, be planted twenty feet apart and should be treated in the same way. Under similar conditions they are not as vigorous growers as the Japs and, of course, do not need such radical treatment in pruning them. They are much more susceptible to the somewhat troublesome black knot, and everlasting and persistent

watchfulness and eradication of this black fungus is the only sure way to success. The European class of varieties do not come into bearing as early as the Japans, neither are they as regular or prolific bearers; nevertheless it is a fine, handsome, high flavored fruit, in favor quite generally. Many large orchardists grow and fruit the best kinds largely for market purposes. When a judicious selection of varieties are properly cultivated and managed under favorable conditions, they always bring remunerative prices.

We follow with a condensed descriptive list of the best varieties:

Bradshaw—Early, dark violet red, juicy, sprightly. Tree vigorous, productive. Ripens middle of August.

Yellow Egg—Large, oval, yellow, juicy, rich, vigorous, productive. Ripens during August.

German Prune—Fruit oval in shape, nearly two inches long, of good quality and much esteemed; hangs on the tree, and is firm, sweet and pleasant. Ripens September 15th.

Shropshire Damson—The flesh is amber colored, juicy and sprightly. Commands a high price; it is enormously productive. One of the most profitable plums we have. Ripens early in October.

Imperial Gage—Rather large oval, greenish; flesh juicy, rich, delicious, a good grower. Ripens middle of August.

Lombard—Medium, round, oval, violet, red, juicy, pleasant and good; adheres to the stone; productive. A valuable market variety. Ripens in August.

Shipper's Pride—Large, round, purple; very firm, excellent quality. Very productive. A great market plum. Ripens in August and September.

Washington—All things considered, this is one of the finest and most popular plums. Fruit very large, roundish oval; skin yellow, with a slight crimson blush in well ripened specimens; flesh very sweet and luscious. Tree vigorous, with broad, handsome foliage; very productive. Ripens about September 1st.

Green Gage—Small but of the highest excellence. Tree a moderate grower. Should be top grafted to get good trees. Ripens in September.

Spaulding—Tree a strong grower, with broad, rich, dark foliage; fruit large, yellowish-green, with marblings of deeper green, and a delicate white bloom; flesh pale yellow, very firm, sprightly, sugary and rich; fine for canning. Ripens about August 20th.

Niagara—Of extra large size and first rate flavor; color dark blue. Good bearer; not liable to rot. Ripens about August 1st. We regard it as one of the best new varieties.

Moore's Artic.—Size medium or below; skin purplish black, with a thin blue bloom; flesh greenish yellow, juicy, sweet and of pleasant flavor. Charles Downing speaks of it as follows: "A new, hardy plum, which originated on the high lands of Aroostook county, Maine, where unprotected and exposed to cold, it has for many years borne enormous crops, and is claimed to be the hardiest plum grown. Tree healthy, vigorous, an early and abundant bearer." Valuable for market. Ripens in September.

Fellenberg (French or Italian Prune).—A fine late Plum; oval; purple; flesh juicy and delicious; parts from stone; fine for drying. Tree a free grower and very productive. Ripens in September.

Coe's Golden Drop—Large and handsome, oval; light yellow; flesh

firm, rich and sweet; adheres to the stone. Tree a moderate grower and very productive. Valuable not only on account of its large size and fine appearance, but its lateness. Ripens last of September.

Wild Goose—An improved variety of the Chickasaw, evident in the great vigor of the tree and increased size of the fruit, which is nearly as large as the Green Gage. Skin purple, with a bloom; flesh juicy, sweet and adheres to the stone. Ripens last of July.

Jefferson—A fine variety; yellow, with a red cheek; flesh orange colored, juicy and rich; parts from the stone. Tree a slow grower, but productive. Ripens last of August.

Yellow Gage—Fruit large, oval; skin golden yellow; flesh deep yellow, rich, sugary and melting. Tree very vigorous and productive. Ripens last of August.

NECTARINES.

This is a very valuable and interesting fruit, but like the Apricot, it requires some special warm, sheltered place and thorough tillage in order to thrive and produce fruit; then it will give astonishingly good results. It must be understood, however, that this fruit cannot survive the vigors of a severe northern climate under any circumstances when grown in the open ground. The trees should be planted fifteen feet apart; they should be pruned, cultivated, fertilized and treated precisely like the peach trees. The Nectarine is especially susceptible to the depredations of the Curculio insects, more so perhaps than the Plums. They should, be treated for this in the same way that we have previously recommended for the Plum. This is a most delicious, smooth skinned fruit, that thrives admirably on any land that will produce peaches. We name and describe a few of the best and most reliable sorts:

Boston—Large, deep yellow, with a bright blush and mottlings of red; sweet and a peculiar, pleasant flavor; freestone; the largest and most beautiful variety known; hardy and productive. Ripens in September.

Early Violet—Medium sized, yellowish green, nearly covered with dark purplish red; juicy, rich and high flavored. Ripens in August.

Early Newington—Large, pale green, nearly covered with blotches of red; juicy, rich and sweet; probably the best clingstone Nectarine. Ripens in September.

Elruge—Medium size, pale green, with a dark red cheek; flesh pale green, very juicy and rich. Ripens in September.

Hunt's Tawney—Medium; pale orange; juicy, rich and excellent; very early and productive; the best of its season, and worthy of general cultivation on account of its hardiness; freestone. Ripens in August.

Red Roman—Large size, greenish yellow, with a dark, dull red cheek; flesh yellowish, fine and rich; productive. Ripens in September.

CHERRY TREES.

Most any kind of land is suitable for the Cherry, excepting ground that is excessively moist or where water remains on the surface any great length of time after a rain storm. It should be remembered, however, that the cherry grows better and gives better results on dry land; this seems to be its natural and favored home, and when grown and fruited on soil of this character it will be a pleasant surprise to all with its magnificent growth and immense productiveness of luscious fruit. We know of no other species of fruit trees that can be so successfully grown on dry situations as the Cherry. There is not in our enlarged collection of fruit trees any other family that we can recommend that will

be as desirable, beneficial and profitable to serve the double purpose of furnishing us with fruit and shade. Were we restricted to one tree, we would unhesitatingly select the Cherry on account of its all around valuable services. The Cherry is one of our best fruits for home consumption and profitable for market purposes. It is a common occurrence to have a tree of the sweet sort produce twenty dollars worth of fruit. We have picked from the sour kinds sixty pounds of fruit when the trees had been planted only four years. Cherry trees are divided into two classes, namely, Heart and Bigarreau, and Duke and Morrello.



THE HEART AND BIGARREAU CHERRIES.

These are commonly called sweet cherries, and are large, vigorous growers and make a magnificent tree with large, open, spreading heads. They are ornamental and the foliage remains on the trees the greatest portion of the year, coming into leaf very early in the Spring and remain so in the Fall later than most any other fruit tree. They are desirable for both fruit and shade. It is detrimental to keep the Cherry under constant tillage, which causes the bursting open of the bark of the tree. In fact,

after the Heart and Bigarreau trees have been planted three or four years it is best to seed down the ground with grass. These are desirable to plant in odd corners, about buildings, along fences and for fruit and shade on your ground along the public highway. The ground should be prepared for them and they should be handled and treated as recommended in the opening chapter of this book.

Pruning—When planting, the Cherry should not be cut back as severely as the other fruits; remove one-third of the wood, which is quite

sufficient and the after pruning should be done sparingly, keeping the head of the tree open by removing the small branches each year. It is a dangerous undertaking to remove large limbs from the cherry tree; we have seen fatal results from this practice in the years past. The fruit of the cherry is somewhat susceptible to rotting, particularly so in rainy seasons. This can be largely, in fact, almost entirely, overcome by spraying with the Paris Green solution (formulated on page 11), just after the fruit sets and again in about two weeks after first application. For Black Aphis, which so often covers the ends of the present season's growth and quirl up the leaves, spray with kerosene emulsion. This is also described on page 12.

Plant Twenty-five Feet Apart—The Heart and Bigarreau family that we have under consideration at this writing should be planted twenty-five feet apart each way. When they are grown in rows for orchard purposes the ground can be cropped between the trees with low grown vegetables for three or four years after they are planted, then, as previously stated, the ground should be seeded down to grass. Always give the Cherry shallow cultivation.

Fertilizers—Any of the kinds recommended for Plums or Peaches can be used for the Cherry. It must be applied judiciously to guard against an over supply of wood growth which would exhaust the trees and produce injury by splitting of the bark heretofore referred to. Another efficacious way to prevent this splitting of the bark, and more especially sunscald, in localities where the Cherry is particularly susceptible to injuries of these kinds is in the beginning to head the tree low down near the surface of the ground, leaving not more than two feet of a clean, smooth trunk. The practice ordinarily is to head the tree four or five feet from the ground.

VARIETIES OF CHERRIES—HEART AND BIGARREAU.

One of the things that we have reason to be grateful for in horticulture is the rather limited list of varieties of cherries as compared with other fruits. The disseminators of new fruits have not been as studious and interested in the production of new varieties of the cherries as with other fruits. We have, however, a choice list fully large enough for all practical purposes, and no one will make a mistake in planting the varieties that are here selected and named:

Black Eagle—Moderate growth. Large, black; tender, rich and juicy; best. Ripening first of July. Tree a good, fair grower and moderately productive.

Black Tartarian—Very large, purplish black, half tender, flavor mild and pleasant. Ripe last of June and beginning of July. One of the most popular varieties in all parts of the country. Trees are remarkably strong growers, regular and productive bearers; grown largely for market purposes, for which it has no superior.

Coe's Transparent—Medium size, pale amber, red and mottled next the sun; tender, sweet and fine; one of the best. Ripens last of June and first of July.

Gov. Wood—The finest of Dr. Kirtland's seedlings, of Ohio; clear, light red, tender, delicious. An old reliable sort; strong grower and productive. Ripens end of June.

Knight's Early Black—Large, black, tender, juicy, rich and excellent; good grower and productive. Valuable on account of its earliness. The trees are good average growers. Season from middle to last of June.

Mercer—Tree a good grower, very hardy. Fruit dark, red, larger than Black Tartarian, and equally as fine in flavor. Ripens the end of June.

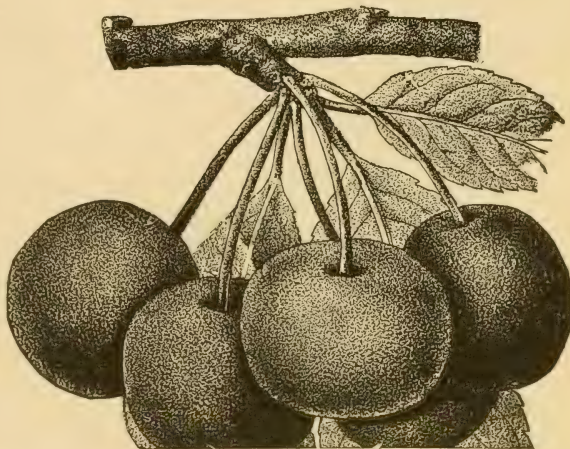
Napoleon—A magnificent cherry of the largest size, pale yellow, with a bright red cheek, flesh very firm, juicy and sweet. An old reliable standard variety, grown extensively for market; trees are vigorous growers and exceedingly productive. Season first part of July.

Rockport—Large, pale amber in the shade, light red in the sun; half tender, sweet and good. Trees strong, erect growers and productive. Ripens early in July.

Schmidt's Bigarreau—Fruit of the largest size; in color a rich, glossy black. Tree a good grower and bears abundant crops. Ripens early in July.

Windsor—The cherries are obtuse, heart shaped, dark purple or nearly black; fine in texture and of the best flavor. Tree hardy and exceedingly productive. A very valuable late variety for market and family use. Within the last few years the Windsor has been planted extensively. We hear good reports from it from all sections. The trees bear young and regularly with us. Fruit ripens the last of July.

Yellow Spanish—Large, pale yellow, with a bright red cheek in the sun, flesh firm, juicy and delicious. Valuable on account of its early ripening; trees productive and strong growers. Ripens about middle of June.



DUKE AND MORRELLO CHERRIES.

These should be planted fifteen feet apart, and should be treated much the same as the Heart and Bigarreau. The trees are not near as large as the last mentioned family and can be planted closer together. In all cases these should be headed low down, or say within two feet of the ground. Dukes and Morrellos will come into bearing the second and third years after being planted, and are good, regular abundant fruiters. Of late years they are grown much more extensively for commercial orcharding than the other class, and from various reports received from a large territory they seem to be more profitable, except in the case of some of the Dukes, like the May Duke, the fruit of which is sub-acid and is, of course, used principally for preserving or canning. The fruit does not rot like the sweet species and can remain on the tree for two or three weeks after becoming ripe; this is a valuable privilege and one

that is thoroughly appreciated at all times, more particularly on occasions when the market may be a little over supplied with fruit of this kind. The Dukes and Morrellos are not as susceptible to splitting of the bark and sun-scald as the Hearts and Bigarreaus, consequently they can be kept under constant, clean tillage, and this is a necessity to the best results. However, they will grow, endure and do fairly well when grown in sod ground, along fence lines and in odd corners. Our own experience with this family of cherries has been very interesting and at all times profitable and satisfactory. On many occasions and in different years have "wife" and myself gathered four and five quarts of this fruit from three year old trees from the bud. These need spraying the same as the family of sweets; they are, however practically immune from the Black Aphis. The list of varieties are such and so constituted in their order of ripening that we can produce fruit from this class from early in June until late in July. This is a valuable consideration whether the trees to be planted are for home use or for market, and we should select our list of sorts to cover the entire season. It should be our aim and purpose at all times to train these Dukes and Morellos low to the ground. This can be done in the pruning, and is readily accomplished with the Morrellos. It is a little more difficult, however, with the Dukes. It is characteristic of them to grow in a pyramidal shape, yet if they are started right and headed low down when first planted this tendency is readily overcome. It is important that they should be headed back and kept in subjection in order to prevent a large, heavy top growth, which invariably causes the leading branches, and in many instances, one side of the tree, to break down with its heavy load of foliage and fruit. During the past two years the writer has lost valuable trees of the May Duke and Late Duke from this neglect and indifference in the proper formation of the trees. We should grow and shape our Duke and Morrello trees that we can gather the greater portion of the fruit from the ground and the balance with the use of an ordinary step ladder. The list of good varieties of these cherries is rather limited, but fully equal and sufficient for our wants. We follow with a splendid list, and we are not exaggerating or making an assertion that cannot be maintained when we state that they are all good:

Belle Magnifique—Fruit large, roundish; skin bright red; flesh tender, juicy, sprightly sub-acid; one of the finest of this class of cherries. Tree hardy, vigorous and very productive. Ripens last of July.

Dyehouse—Partakes of both the Duke and Morrello in wood and fruit; a very early and sure bearer; ripens a week before Early Richmond, of better quality, and quite as productive. Ripens in June.

Empress Eugenie—Fruit large, dark red, very rich, tender and sub-acid. A superior variety. The trees are good, strong growers, combining the characteristics of the Duke and Morrello. They come into bearing early; season of fruit during July.

Early Richmond—The most popular of all for commercial purposes and for home use; is being fruited and planted extensively; bears well every year. Medium size; dark red, melting juicy, sprightly acid flavor. This is one of the most valuable and popular of the acid cherries, and is unsurpassed for cooking purposes. Tree a slender grower, with a roundish, spreading head, and is exceedingly productive. The most hardy of all varieties, uninjured by the coldest winters, when almost every other variety has been killed. Ripens through June.

English Morello.—Medium to large, blackish red, rich, acid, juicy and good. A good companion for the Early Richmond; trees vigorous grow-

ers and regular fruiters; very prolific. One of the best we have for extending the season for fruit. Ripens during the month of July and in late exposures the fruit will remain on the tree until along in August.

Large Montmorency—Very hardy and an immense bearer; commences to fruit while young, and is loaded annually thereafter with fine crops. Fruit very large, fine flavor, and of bright, clear, shining red; valuable everywhere. Ripens midway between Early Richmond and English Morello; trees strong growers.

Late Duke—Fruit large; dark red, late and fine. Trees are early producers, prolific and good growers. Ripens late in July.

Louis Phillippe—Extra hardy; vigorous grower and very productive; large size; rich dark red; flesh red, tender, juicy, with mild sub-acid flavor. A valuable variety that is being planted largely; valuable for all purposes. Ripens in July.

May Duke—Large, dark red, juicy and rich, and an excellent variety; productive. The May Duke comes into bearing as early as any of the Dukes or Morellos; it is a vigorous grower and makes an abundance of wood each season; the fruit is pleasing to the eye and of fine rich sub-acid flavor; delicious for eating and the choicest for canning. It ripens early in May, which is a desired quality.

Olivet—This variety is of the greatest value. Fruit large; flesh red, with rose-colored juice, tender, rich and vinous, with mild sub-acid flavor. As productive as the best of the Duke sorts, and probably the largest of this class. Ripens in June and is largely grown for the leading markets.

QUINCE TREES.

This is a very valuable fruit and profitable when well grown and cared for. It is of late years being planted quite extensively. The Quince succeeds on most any kind of land, over a wide territory, and under varied climatic conditions. It does best, however, on good, rich, heavy soil underlaid with clay. On land of this character the trees seem to live longer and endure careless or indifferent cultivation and in fact, we have seen them produce good crops from year to year under these unfavorable conditions on land of this kind. There is always a good demand for Quinces; we have never yet seen the time when a good fair fruit could not be disposed of at a paying price. The Quince is used almost exclusively for canning by itself, and often to good advantage mixed with other fruits to add to their flavor and lusciousness. When used for this purpose one quart of Quinces to five of the other fruit is about the proper proportions. The Quince comes into bearing three to four years after being planted and thereafter fruits annually. Prepare the ground the same as for the other fruits as directed in the beginning of this work. For orchard planting set the trees fifteen feet apart each way. You can for several years grow low growing vegetables or some of the small fruits with them, preferably the Strawberry or Currant, or both, by planting the Strawberry between the rows of trees and the Currants between the trees in the row. When this system is adopted we can cultivate only one way. We have grown these small fruits in a Quince orchard for a number of years and found them a desirable and profitable

combination. The Quince is a favorite tree for the Borer to attack, and they should be examined two or three times each year for this villainous, destructive pest. The trees rarely attain a height of over ten to twelve feet, and on account of its semi-dwarf habit is a convenient and useful tree to plant in odd corners of the garden or near the edge of the road or walk. The trees are not as productive of large wood growth as the other tree fruits, their tendency being to grow stocky, thus making a quantity of small wood over the entire tree. This is conducive to a close, dense tree in the center and, of course, for best results this superfluous wood must be removed each year, the purpose being to keep the tree open in the center. Occasionally, and without any apparent cause, individual branches will die off; these should be removed promptly. Sometimes blight will attack the end of the growing branches in the Summer. Cut this back, down below the live wood as soon as it shows itself and burn it. When the trees are over bearing thin off the fruit same as you would for Pears or Peaches, leaving the samples five to six inches apart. When planting your trees prune back severely and start the head close to the ground; a clean trunk of eighteen inches is all sufficient below the first branches. Spray with the Bordeaux Mixture same as for Plums and Cherries. Fertilize and keep your trees in vigorous growing condition with top dressings of well rotted stable manure, unleached wood ashes, nitrate of soda, pure ground bone, or some good make of commercial fertilizer. Whatever you use should be at once incorporated with the soil to obtain full benefit. When your soil needs humus and nitrogen seed down in July or August with Red or Crimson Clover as previously recommended and explained under the heading, "The Use of Clover."

The varieties hereafter named are all good and trustworthy:

Bourgeat Quince—This is the most remarkable of all Quinces. There is no other variety which grows so vigorously, and there is no other variety of fruit which will keep so long in perfect condition. The Bourgeat Quince bears at an early age, producing large crops of exceedingly large and handsome fruit, of a rich golden color. While it ripens soon after the Orange, it keeps till past mid-winter when desired, or it is ready to use at once on maturity. This is a remarkable characteristic, since ordinary Quinces are of a perishable nature. The crop can be held in the hands of the grower or in the hands of the purchaser until the market suits his fancy. Three bushels of fruit have been gathered from a ten-year-old tree. A lady writes that she finds it superior to all others for cooking quickly, like apples. It has received first premium at the Massachusetts Horticultural Society and other societies. Season for fruit October until December.

Champion—Fruit averages larger than Orange, more oval in shape, quality equally fine, and a longer keeper, a splendid Quince. Season for ripening October and November.

Meech's Prolific.—A vigorous grower, and immensely productive, frequently bearing fruit when but two years planted, increasing in quantity yearly to such an extent as to require vigorous thinning to prevent injury to the tree from over-bearing.

The fruit is large, lively orange color, of great beauty and delightful fragrance. Its cooking qualities are unsurpassed. Ripens, October and November.

Orange.—Large, roundish, bright golden yellow, cooks tender and is of very excellent flavor. This is perhaps the earliest good Quince we

have, and is valuable on this account as well as for its annual bearing and productive fruit. Ripens early in October.

Rea's Mammoth.—A superb fruit, much larger than Orange, but of the same form and color. Tree healthy, very thrifty grower, productive. Season for fruit, October and early November.

THE MULBERRY.

This tree is not extensively grown and cultivated for its fruit, which is not popular with the classes, probably because we have such a quantity of fruit at its season of ripening that is richer and of better flavor, yet we have found many people who like the flavor of the Mulberry and eat it with great relish. It was the late noted divine, Henry Ward Beecher, who remarked, "I would rather have a tree of the Downing Mulberry than a bed of strawberries." The fruit begins to ripen early in July, and continues in bearing for six to eight weeks, a desirable and valuable characteristic which will be appreciated by all who like the fruit. However, the Mulberry has another and very important value: it is a magnificent shade tree, a clean, healthy, vigorous grower, developing into a large handsome tree. It is furnished with a profusion of foliage of deep verdure, making a dense and delightful shade and is one of our choicest ornamental trees and suitable for planting on home grounds and about the poultry yards, as the fowl like the fruit and eat it as soon as it drops from the trees. The trees are easily grown, thrive well in sod ground and need little if any pruning. An important factor in planting the Mulberry, and generally overlooked, is their fruit attract the birds and keep them from destroying our other fruits. We want the birds and should plant fruit such as the Mulberry for their benefit.

Downing.—This is the finest variety of Mulberry yet introduced and its rapid growth, profusion of foliage of such deep verdure and dense shade should give it popularity. It is a charming tree, with a shapely and compact habit of form, long-lived, and its wood very durable. The fruit is very abundant. It is sweet, is free from the mawkish, cloying sweetness of other Mulberries, and is really very good. We regard it as especially desirable for planting in grounds of limited extent, such as the village door yard, where but one or two shade trees are grown. For this purpose it is not excelled by any other tree and no one will regret planting it.

Russian.—A very hardy, rapid growing timber tree of great value, especially at the West. Introduced by the Mennonites; foliage abundant, and is said to be very desirable in the culture of silk worms. Fruit of good size and produced in great abundance.

Hick's Everbearing.—Remarkably prolific and remains a very long time in bearing; the fruit is of good size, rich and sweet. An excellent sort for furnishing food for poultry, which are excessively fond of Mulberries. By many this is esteemed superior to Downing.

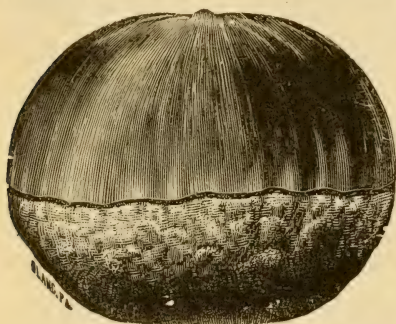
New American.—Equal to Downing, but a much hardier tree; fruit large and black.

NUTS.

Nut tree planting has become very popular of late. We have been importing annually over two million dollars' worth of nuts that we have learned of late years can be grown just as easily in our own country. The tree should be planted, pruned and cultivated much the same as we treat our fruit trees.

Varieties like the Paragon and Numbo chestnuts will come into bearing the second year after being planted. The fruit is very large and of the best quality. The Chestnut, Walnut and Hickories should be planted twenty-five feet apart; The Filberts fifteen feet apart. The writer grows these nuts in the orchard with his Apples, Peaches, Pears and Plums and has had a very pleasant and satisfactory experience with them. From top grafted trees two years planted we have had twenty-

five to forty large burrs of fruit which nearly all matured. This immense productiveness increases as the trees grow older. They are at once both valuable and ornamental and should be in every fruit garden. The varieties that gave us such early and astonishing good results are Paragon, Numbo and Success. These were of course grown in rather a limited way. We are only recommending these nuts for the private garden and in a small way. We have not had a large and finished experience with them and cannot advise them in a large way for market purposes. Nut growing for



PARAGON.

profit is of itself quite a specialty and as a matter of fact must be the result of years of experience and experimenting; then, in this particular branch of horticulture very much depends on the man and his careful attention to many little details which must be attended to at the proper time to insure success. In a word, one must have a special liking for this work; then too, much depends on the territory, the land and exposure. Most any land that is not cold or too wet will answer for the growing of these nuts. They have done best with us, however on a clay loam. It is always best to plant the trees rather than the nuts, which will not reproduce themselves. There is quite an extended list of varieties and we make a selection of what we believe to be the best, all things considered.

CHESTNUTS.

Paragon.—This variety has become very popular of late and to our knowledge is being planted quite extensively. The tree is a rapid, strong, vigorous grower and comes into bearing a short time after being planted. It is productive of large nuts; the flavor is very good. We can recommend this variety to all.

Numbo.—A hardy, productive variety of European origin, but seems well adapted to this climate. It ripens early, nuts are large and of good quality. An early fruiter; an exceedingly productive and annual bearer.

Japan Giant Chestnut.—The tree is decidedly ornamental, hardy and productive, of dwarf habit, bearing extremely young; nuts of enormous size.

Ridgley.—Tree of immense size and very productive, more than 5 bushels of nuts, which sold at \$11 per bushel, having been gathered from the original tree in a single season; burrs are of medium size and carry from 2 to 3 nuts each; nuts of medium size, with some fuzz at point; kernels sweet and of good quality. One of the most valuable. Tree very healthy.

American or Sweet.—The well-known chestnut of the forest. In sweetness and delicacy of flavor, or as a shade tree, unsurpassed. These trees grow to enormous size and bear every year prolific crops of fruit of the highest quality.

Comfort.—A very large, handsome nut, that has been grown in Pennsylvania for many years, and is found so nearly identical with Paragon in growth and fruit that it is not improbable that it was a nut of this variety from which Mr. Schaeffer, of Germantown, grew the original Paragon tree. Comes to fruitage very young, and is an enormous bearer of nuts of very good quality.

Spanish Chestnut.—A very hardy, productive nut and becoming more popular each year.

Japan Mammoth.—Immense size, and of fine flavor; the burrs contain at times as many as five large nuts; the tree is similar in habit and growth to the Italian Chestnut; they yield fruit in two years after planting; seedlings vary in size and shape, as well as in habit of growth and productiveness, and are not so reliable as grafted trees.

Early Reliance (Japan). Tree of dwarf, spreading habit; begins to bear very young. Nuts large, smooth and very attractive. Enormously productive.



AMERICAN SWEET.

PECANS.

Pecan.—The Pecan bears oblong, smooth thin-shelled nuts, with sweet and delicious kernels. The nuts are very desirable for family use, or valuable for market.



PECAN.

ways sells readily at good prices.

Pecan, (Thin Shelled).—This nut, so very well known and so highly prized by all, is of the easiest culture and hardy at the North. The nuts are large and very thin-shelled. The best and earliest in bearing. Trees valuable for timber.

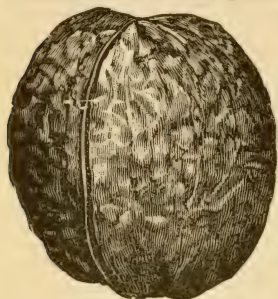
HICKORY NUTS.

Shellbark.—Tree of large growth, entirely hardy and productive. Nuts thin-shelled; kernel sweet and excellent. Al-

WALNUTS.

Japan Walnut (Sieboldiana).—A native of the mountains of Japan. An extremely hardy, vigorous grower, bears young, very productive.

Japan Walnut (Cordiformis).—Differs from Sieboldiana in form. The nuts are broad, pointed and flattened. The Japan Walnuts are valuable for both their fine fruit and shade.



English Walnut.—It is a profitable tree to plant, as it produces large crops of excellent nuts, and the large quantities of ripe nuts that are annually imported and sold here, prove the estimation in which they are held for the table.

English Filbert, or Hazlenut.—Nut nearly round, rich and of excellent flavor, admired for dessert. Superior to our native Hazlenut. In every way the nuts are larger, fully as good in flavor. The trees are good strong growers, come into bearing a short time after being planted and are annual productive fruiters.

THE STRAWBERRY.

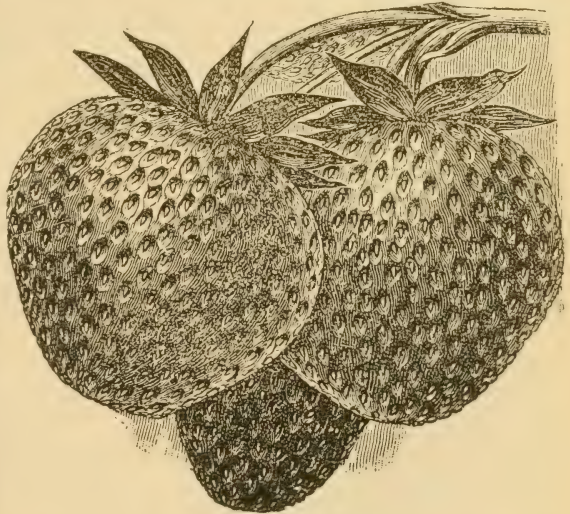
“Queen of the Small Fruits.”

My life has been more closely associated with the Strawberry than with any other fruit. At this period and after a protracted and uninterrupted experience of thirty-five years the reference to this fruit always brings back pleasant memories of my boyhood days; the reader will therefore, I trust, be considerate and indulgent with me, if I transgress here, and for the moment lay aside the original purpose of this work to recall some of my early reminiscences.

It was in 1865 when I was nine years of age that I first saw a bed of cultivated Strawberries. At that time I was employed grazing cows along the public highway, our own cow and any of the neighbor's that were willing to pay my father twenty-five cents a week per head for my services. Whilst thus engaged, and sitting on a stone wall in front of the small fruit farm of Mr. John Sutherland (long since gone to his reward) I was attracted by this bed of Strawberries in their early stages of development. It is perhaps needless for me to state that my interest was increased each day as the fruit began to color and turn red, and that I found it very convenient to graze the cows in that particular section of the road, and when asked for an explanation I answered that the grass was knee high there and the cows wanted to stay there all the time, but the fruit ripened and such heaps of it lay there it seemed to me that every plant was producing five quarts. Now, Mr. Sutherland was an average good citizen, honest neighborly, stern and feared by the boys. Dare I ask him for some of those Strawberries? No, I was afraid of him, and the best I could expect would be a few berries with a command to get myself and cows away from there. He would not turn me loose in that patch to help myself, of that I was sure. After debating the question with myself for two days, a little on what I then considered the great sin of stealing in this way and quite considerable on what

seemed more important, the fear of getting caught, the evil impulses conquered. I watched a favorable opportunity, climbed over the wall and helped myself, and reader, you know what that means if you are acquainted with the capabilities of a nine year old boy in a strawberry patch in the beginning of the fruiting season. I came out filled and unmolested. I pass this spot quite frequently now and am always reminded of this incident, but must confess that I have never yet experienced any remorse, nor have I done any penance for this impudence; on the other hand, that small bed of strawberries awakened in me an enthusiasm and interest for this fruit that has never faltered, but has increased each year. A few years later I was employed on the small fruit farm of the late E. P. Roe pulling weeds and picking strawberries. I at once became intensely interested in this fruit and after the fruiting season knew all the varieties on the place by name as well as their individual characteristics, but the moral of my story is yet to be briefly told. For the past twenty years since I have been in the nursery business for myself, fruiting each season from five to ten acres of strawberries, it has been an easy matter for me to deal kindly and patiently with the small boys and girls who have been caught in the fields helping themselves by eating and even gathering in baskets and otherwise. The worst thing that ever happened to any of them for this liberty was a slight reprimand by some one else in authority.

Preparation of the Soil.—This should be done in the same thorough way as recommended for the fruit trees, and if possible we should be even more particular to have the ground in the most perfect condition; we should not stop plowing and harrowing until we are sure that all the soil, top, middle and bottom, is thoroughly and finely pulverized. This is of absolute necessity so that the small roots may have every favorable opportunity to take hold and at once establish themselves in the ground.



PRESIDENT.

It has been my experience that many people defer planting the strawberry for the reason that they think, in order to be successful with it they must have some especially favored land, situation or location. This is a great mistake. The strawberry may be grown to perfection on any land that will produce a crop of potatoes, corn, peas or other vegetables. Ground that has been used for vegetables or fruit is the best for the strawberry. Almost any soil will answer, but we must remember that the best results are obtained from a dark, rich loose soil with a clay

sub-soil. When grown on land of this kind the fruit is always larger, of better color and flavor besides the plants mature their full crop when thus grown. Strawberries should not be planted on newly ploughed sod ground nor in land that water remains on after a rain. Such land bakes and consequently the soil is coarse and lumpy. Then, of course, it is next to impossible to cultivate such land as it should be. There is no single requirement in connection with trees, plants and vines of such supreme importance as the careful, intelligent and best preparation of the soil for the strawberry, with perhaps the possible exception of the asparagus, no fruit is so unsatisfactory and unprofitable when neglected or partially cared for. On the other hand, there is no other tree, plant or vine that is grown in the soil that will respond as liberally to good treatment as the strawberry. No one not well acquainted with their possibilities would think of believing what these plants are capable of producing when grown, cultivated and fruited under favorable conditions. Statements are misleading, deceptive, and often unreliable, particularly when we are not familiar with all the circumstances; therefore we hesitate to relate here in detail some of our pleasant experiences and surprises with the strawberry, lest perchance we might create in the minds of our readers too sanguine expectations from their prospective plantings of this fruit. We will state, however, and without fear of contradiction, that the progressive, up-to-date fruit grower, one who has a thorough knowledge of the needs and requirements of this plant, can one year with another, with a good fair average market and other things being equal, get a net profit of two hundred and fifty dollars from an acre of strawberries. It may seem perhaps, a superfluous waste of time, and space for me to remind my readers who have their own gardens of the importance of growing their own fruit. No home garden is complete or properly furnished without a liberal bed of this luscious fruit. All should have at least three varieties: early, intermediate and late, in order to lengthen the season. Aim to have fruit for every meal for six weeks—you can accomplish this purpose without much trouble.

Fertilizers—If stable manure is to be used, and the ground previously used for some annual crop is in good fair fertility, it should be applied at the rate of ten to twelve tons to the acre, broadcasting it over the ground directly before the plowing. Unleached wood ashes is very desirable and valuable and it may be used at the rate of two tons to the acre, broadcasting it over the ground before the last harrowing. Then any good complete manure like the Mapes' Fruit and Vine manure can be used at the rate of one ton to the acre, spreading it over the ground like the wood ashes before the last use of the harrow. But this is not all; no matter which one of the above three best manures you use directly after your plants are set out you should apply a little dressing around each plant. We prefer the complete fertilizer for this purpose and at the rate of six hundred pounds to the acre. Wood ashes is next best for this purpose and should be used at the rate of twelve hundred pounds per acre. Whatever is used should be applied in a ring near to and around the plant. Thus applied they are very beneficial, as the plant food will soon reach the roots with the rain or tillage and start them growing at once. Hen manure mixed with three parts soil can also be used as a top dressing for Strawberries, at the rate of two tons of the mixture to the acre used as a top dressing before harrowing. Muriate of potash and nitrate of soda can also be used as a top dressing for the strawberry. In using nitrate of soda be cautious in applying it when the foliage is wet from rain or dew.

How to Plant.—For field culture the plant should be set four feet

apart between the rows and two feet apart in the rows, requiring about five thousand five hundred plants to the acre. By planting in this way you can form a matted row about twenty-two inches in width which will give you ample room for the cultivator at all times; then for the finest and largest fruit the plants in this matted row should be thinned out to six inches apart. This is not as large or expensive a job as it seems at first thought, and will repay for the trouble; this is the ideal system of



RIGHT WAY OF PLANTING.

fruiting the Strawberry for profitable results. We get fully one-third more fruit this way than in the hill system, which means to keep all runners removed from the parent plant, thus forming it into a large stool. When grown in this way for field culture the plants should be set three and one-half feet apart each way, and they can then be cultivated both ways from the beginning to the end of the plantation. The removing of these runners as they appear is quite a troublesome and expensive work, so that the expense of cultivation is about the same with both systems. However, under the hill system we are perhaps a little better fortified against a severe drought, especially when the plants are in bloom and during the fruiting period for the reason that we can cultivate quite close to the plants and preserve the needed moisture. Still this can be done quite as efficaciously with the matted row system as heretofore described.

For Garden Culture.—Where the tillage is to be done entirely with hand labor the plants can be set two and one-half feet apart between the rows and one foot apart in the row. You can adopt either the matted row or the hill system as you prefer for the home garden.

Prepare a muddle composed of fine manure and water. Dip the roots of the plants in it, and be sure that all the roots are moistened. Heel them in the ground near where you are to plant them, and if the sun is very warm cover the leaves with hay, straw or sea grass. Avoid planting on a windy day; ten minutes wind is worse on the roots of plants than one hour's sun. Only drop a few plants in advance of the planter. Set the plant so that the crown shows above the surface. The Strawberry is divided into two classes—the perfect flowering kinds, that can be fruited alone or with others, and the imperfect or pistillate varieties that require pollination by the perfect or staminate class. There is no other objection to the imperfect plants; many of our best strawberries belong to this class, and as a rule they are the most perfect sorts. However, the flavor is rather inferior. You can use the line or marker to plant by. Set the roots straight down. Draw the soil around the plants with the hands, and so firm the soil around them that the leaf of the plants will break in two before the plants will allow themselves to leave their places. Should the ground be dry, or the sun very warm, use any mulching material at hand (that will admit of light and air) to shade the plants for a few days, or until you have rain.



WRONG WAY OF PLANTING.

Watering.—We do not recommend watering, except in extreme drought



PLANTED TOO DEEP.

about the plants and making it possible for the roots to be injured by the weather, is positively detrimental to the welfare of the plant.

When to Plant.—The ordinary layer Strawberry plants can be planted in the Spring just as soon as the ground is dry enough to handle—the earlier the better. We have the months of March and April to plant in. When the conditions are favorable they can be planted the first week in May, but the plants are quite advanced at this late season, and it is a risky undertaking to set them at this time, and we would not think of recommending this late planting, particularly in any large way. Plant as early as possible. Spring set plants should never be permitted to bear fruit the same year they are planted. Remove all fruit stalks as soon as they appear, then the plants will preserve their vitality and grow strong and vigorous for the coming season's fruiting. The Strawberry can be planted again any time after August first until the later part of November, which is a very good time to set them out.



PLANTED TOO SHALLOW.

When they are planted during the months of August and September they will bear a nice lot of fruit the season following without injury to the plants.



PERFECT FLOWER.

Pot Grown Plants can be planted to good advantage any month in the year that you can prepare your ground for them except during the months of June and July. These plants will produce choice, fine fruit the first fruiting season after they are set out. They are, of course, more expensive than the ordinary ground layer plants and are intended for and

principally used by those with small private gardens, or those who are in a hurry to get fruit as early as possible after planting.

Cultivation.—Use the cultivator and hoe for this purpose always. Strive to kill the weeds before you can see them. It will cost but little more to cultivate an acre of Strawberries than it will to cultivate an acre of potatoes or corn, providing of course, the work is done at the proper time. Keep the ground free from weeds. If you do this you will give the proper cultivation. We plow between the rows as early in Spring as the ground is fit to work, and use the cultivator as often afterwards as is necessary to keep the ground mellow, right up to the time when they are in bloom. In fact, we have often run the cultivator between the rows after the fruit was ripe. This Spring cultivation



FISTILLATE.

increase both the size and yield of the fruit. If you have a matted row about twenty-two inches wide you have the very best row for fruit, and will have ample room for horse and cultivator between the rows. In the small garden bed this tillage can be done with the spade and hoe.

Mulching.—This is essential to the best results, as it keeps the ground moist and the fruit clean. It should be practiced always in the small planting for home use and in fact by all who make a business of producing the choicest and most attractive fruit that at all times will be clean and free from the soil after heavy rains during the fruiting period. This mulching should be placed directly under the plants; it is not necessary to cover the cultivated land between the rows with it. However, it is beneficial to do this and when we have plenty of material it is recommended. Apply this mulch directly before the fruit ripens or just as soon as the berries begin to show color directly after the last tillage of the plantation, which should be as late as possible. This mulch should be about one inch in thickness, or just sufficient to cover the ground from view. Many materials are used for this purpose, such as wheat, rye and oat straw and newly cut grass, which should be used in its green state directly as soon as cut. Grass is the most convenient article to use when it can be procured, and it is almost always available. A load of it judiciously distributed will cover a surprisingly large area of ground.

Winter Protection.—One of the most important things necessary for a good crop of fruit is the protection of the plants during the winter, and more especially during the Spring months this is necessary to prevent the plants from heaving during the frequent freezing and thawing at this season of the year. In changeable Winter weather, such as we have had for several years past, we are liable to lose our entire crop of fruit for neglect of this protection. Many materials are used for this purpose, but positively the best covering is horse manure. As soon as the ground becomes frozen you can drive on the beds and cover the plants well from view and let it remain on the plants in the Spring until very late. Strawberries need both food and covering and I know of no better way of supplying these needs at one and the same time than to cover them with this manure. "Yes, horse manure will bring weeds, the greatest blessing we have. Plants choked by weeds always remind me of the crying babe in the cradle; both need care, attention and nursing." Nature, always provident and generous, comes to relieve them by fortifying them, to ask for what they want. Straw of any kind is also good for Winter protection and is used largely for this purpose; evergreen boughs also are very desirable in a limited way for the small bed; these, like straw, necessitate removal again in the Spring, making considerable labor, whereas when horse manure is used it needs only to be removed to the cultivated ground between the rows and with plow and cultivator be incorporated with the soil. Be sure to let this covering remain on the plants until all danger of frost is past in the Spring. Do not be deceived by a day or two of premature warm weather in the early Spring and assume that Summer is here and uncover your plants, regretting it afterwards. Always remember that these plants will not be injured by covering, even if the weather is a little warm, the worst that can possibly happen is to retard the ripening of the fruit. It is better to be on the safe side and not uncover until the season is well advanced. If we seem to be dwelling unnecessarily long on this matter, which is of supreme importance, it is to guard our readers against losses from repetition along these lines that have frequently come to our observation in the past—severe financial

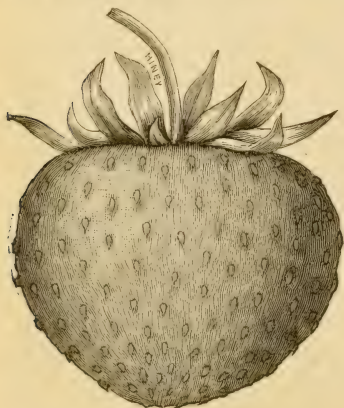
losses that could and should have been averted with a little knowledge and forethought.

Fertilizers.—Can be applied, if needed, in the early Spring, directly after the plants have been uncovered, by broadcasting it over the rows in the quantities per acre as recommended heretofore.

Rust on Strawberries.—This comes from various causes. Land that has been used continuously for strawberries for a number of years is almost sure to produce it. The only remedy then is to plow the plants under and use the land for a year or two for other crops. Then rust comes from an excessive wet season or from long and protracted drought. We should spray with the Bordeaux Mixture or the Ammoniacal Copper Carbonate Solution. We must not use these sprays during the fruiting season, but in the early Spring, or as soon as the crop has been harvested. To guard against rust we must in the beginning select our stock of plants from young, vigorous beds that are used exclusively for propagating purposes and not from worn out old plants or beds that have been fruited for several years and consequently of low vitality and vigor.

VARIETIES OF STRAWBERRIES.

We have in the past twenty-five years fruited many hundreds of varieties of strawberries. For one reason or another nearly all of them have been discarded. It will probably surprise some of our horticultural friends and acquaintances to observe below the small number of sorts we have selected from this long list as the best and the ones we recommend. We have a pretty accurate knowledge of these kinds and believe they will give general satisfaction and good results over a large territory. Besides the ones we mention there are others that succeed and do well in some favored sections, or perhaps near the home of their origin. Such varieties are local in their character and not worthy of general recommendation. It is always safest to select a few of the good old reliable standard sorts that we find in general use throughout the country. Occasionally we find a berry of unknown parentage that is valuable in a local way; more often, however, we find upon investigation, that these so called new wonders are old kinds with new names or without any name. As heretofore explained the perfect flowering kinds will bear alone or with other sorts. The pistillate varieties must have every third row of the staminate.



BEDER WOOD.

Beder Wood (Perfect Flowers).—An early staminate variety of great merit, producing large crops of good sized fruit of excellent quality, round; smooth, regular in shape, bright scarlet in color; good for market or for home use.

Bubach (Pistillate).—Plants are strong, rampant, healthy growers, one of the best for market. The fruit is firm, of good flavor, dark rich color, and pleasing appearance. Season second early. The Bubach has taken a very prominent place in strawberry culture. This berry is planted largely with the Sharpless, the size, color and shape being much alike. If we were going to fruit the strawberry for commercial purposes, we would plant largely of the Bubach for many rea-

sons; it can stand the severest droughts, and has very large foliage to protect its blossoms from late frosts. Needs to be planted with a perfect flowering kind.

Haverland (Pistillate).—Exceedingly vigorous, produces a great number of long fruit-stalks, loaded with medium to large, long, conical, pale scarlet berries. Very regular and uniform in size, making a superb show in the basket or on the table; of fair flavor and valuable for market in many sections. Needs to be grown with a perfect kind; ripens early.

Brandywine (Perfect Flowers).—The fruit is of large size and fine quality, firm and shapely for so large a berry, foliage of the largest and thriftiest. The shape is uniformly good. In general it is heart shape. Flesh red, firm and solid for so large a berry, none more so. Vines exceedingly prolific. Brandywine continues a long time in fruit, a very profitable variety and one that is being planted largely. Desirable for the home garden and for market; a late variety.

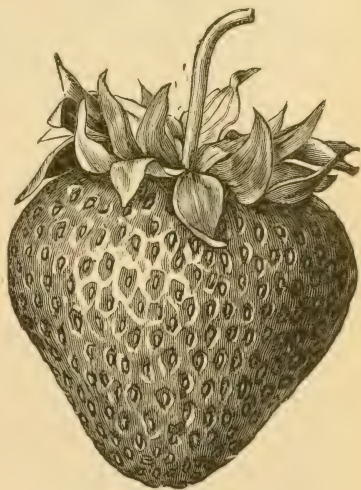
Cumberland Triumph (Perfect Flowers).—An old reliable early berry of fine flavor, desirable for home use. Plants good growers and productive of uniform large fruit that holds its size to the end of the season; fruit light crimson in color and one of our best canning berries.

Gandy (Perfect Flowers).—This superb late variety is second to none as a fine, handsome, beautiful, firm, fine flavored, late berry. The fruit always brings the highest market price. This is one of the most profitable berries to grow for a fancy market or for home use, where quality is the first consideration. The plant is a strong, compact grower; productive of large size, handsome, regular berries, which hold out large to the last picking. The fruit is bright, beautiful, one of the best, if not the best, for market we have. But its superior flavor is what commends it to all in search of a good late berry in every respect.

Glen Mary (Perfect Flowers).—The plants are strong and robust growers, with clean, healthy foliage. It is productive of very large fruit of nearly round, uniform shape. The color is light red. The flavor is very good for so large a berry. One of its chief characteristics is that the last of the fruit is quite as large as the first that ripens.

It is certainly a very productive, valuable variety for a nearby market, and we are able to recommend it for this purpose, or for home use. One of the best early berries in cultivation.

Parsons (Perfect Flowers).—Strong grower and very prolific; fruit, medium to large; color, a beautiful shade of light red; fine flavor. Ripens with the mid-season berries. Can be grown successfully for either home use or commercial purposes. It commands the highest market prices.



GANDY.

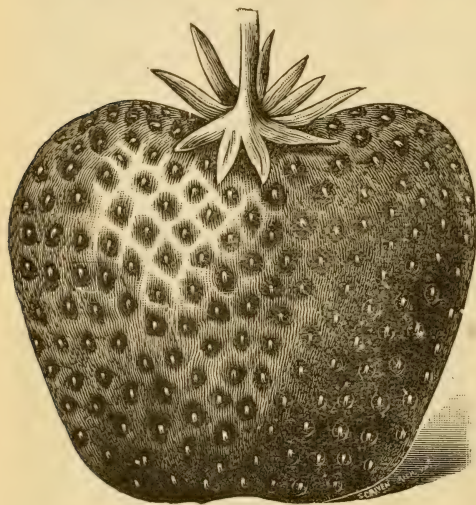
Sample (Pistillate).—Plants good growers, fruit large, round and dark crimson in color and of good quality. It is productive and good for nearby market. Plant a perfect kind with it.

Jessie (Perfect Flowers).—Very early, productive fruit, very large, light crimson in color, firm, and flavor of the best; one of the best varieties we have. A splendid all round berry for home use or market.

Lovett's Early (Perfect Flower).—Its color is dark red. One of the best shippers we have. It is a perfect flowering variety, prolific and a good market berry and among the earliest to ripen.

Margaret (Perfect Flowers).—The plant is large, healthy and a vigorous grower, having dark, glossy foliage. It is very productive, and the fruit is of large size and quality. It ripens all over, a dark, glossy red, and retains its color to the center. Ripens in mid season.

Marshall (Perfect Flowers).—The plants are the rank-est growers; away ahead of



THE MARSHALL.

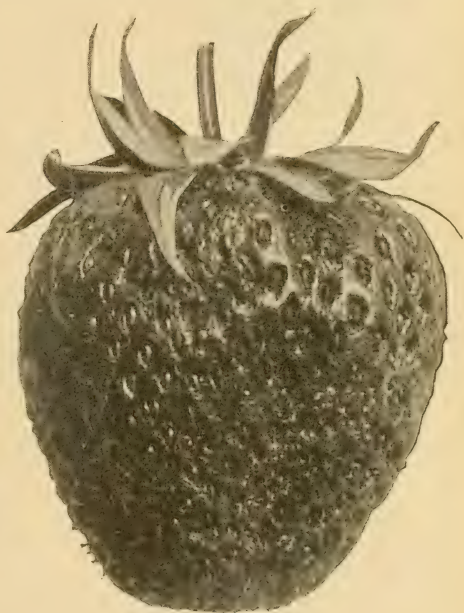
all others in this respect. In shape conical, very regular, each berry like the other; the color is a dark red crimson; flesh is solid and dark red; flavor is the very finest. It is possible to ship this berry hundreds of miles.

It ripens with the early berries and continues in fruit until very late in the season. It gave us berries for our own table for over three weeks. A choice berry for home use or fancy market.

Michel's Early. —Unusually early. Berries bright scarlet, conical, of excellent quality. Resists frost, drought and rust. The fruit is very early, which is its chief value.

Nick Ohmer (Perfect Flowers).—The fruit is of the very largest size, a giant among strawberries. It is never misshapen. Its only departure from the regular roundish conical form is when, under high culture, it is somewhat triangular. It is dark, glossy red, firm and of excellent flavor. A superb, handsome, large fruit of the very finest flavor. Should be in every garden where size, color and high quality are the first consideration. It ripens in mid-season and continues a long time in fruit.

Oom Paul (Perfect Flowers).—Origin of parentage Jessie and Bubach. Stupendous in size and delicious in flavor, nice shape, elegant color, shipping the best. The plant is a very rank grower. Another strong point in favor of Oom Paul is that the last picking never runs small. Berries are very large, roundish, conical; color glossy crimson. It is a wonderfully productive strawberry, and ripens early in the season. Desirable for market and the home garden.



OOM PAUL.

Parker Earle (Perfect Flowers).—The plants of this variety are exceedingly rank growers, with a tendency to make enormous stools. It has perfect flowers and good sized fruit, rather long, with short neck, firm, of good color and fine quality. It is one of the few varieties that is adapted to a wide range of country, and thrives well in so many different soils and climates. Ripening quite late in the season, it should be known as a late berry. When grown under high culture good for market purposes.

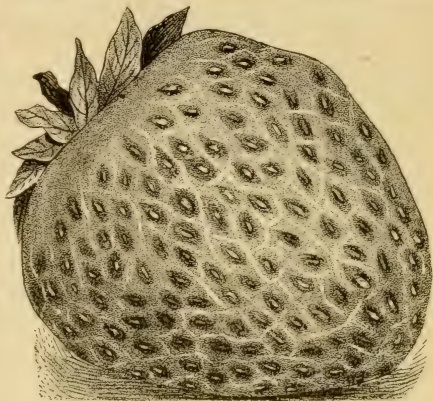
President (Pistillate).—The plants are strong growers, producing an abundance of thick, leathery foliage, dark green in color, and standing very erect, and a thick, stocky fruit stalk. It is very prolific and brings the last berry to perfection. Ripens the last of May and continues a long time in fruit. In size it averages with the largest berries grown, and is absolutely uniform in shape, the berries being almost round, and free from unripened or gnarled ends. The flesh is firm and solid, without hollows or pithy cores. The color is a rich crimson. Valuable for all purposes; must be planted with a staminate variety.

Wm. Belt (Perfect Flowers).—The plant is very large, a most luxuriant grower and remarkably productive. It is medium in ripening—neither very early or very late. Its size is very large indeed. No other variety ever gave us so many immense berries. The color is a brilliant glossy red. It ripens all over without green tips. The quality is of the

very best.. Wm. Belt will be a valuable variety for home use or market. It is one of the most beautiful berries we have ever seen and valuable for commercial purposes as well as for home use.

McKinley (Perfect Flowers).—Berry large, roundish, inclined to conical, but sometimes flattened or cox-combed, color crimson, flesh firm, quality good. The plants are strong growers, with fine, large, dark foliage. Very productive. It ripens in mid-season and continues a long time in fruit.

New York (Perfect Flowers).—In productiveness it is hard to believe that it has an equal. It is really astonishing when grown on good soil and with generous culture. Berries dark scarlet, changing to crimson when fully ripe, coloring all over at once; excellent in quality. In growth of plant it is exceedingly vigorous, with foliage that is large, bright and clean. For such a large berry it is a great bearer. Ripens in mid-season.



NICK OHMER.

The Rough Rider (Perfect Flowers).—The plants are strong, large growers, fruit medium in size, the flavor is poor being acid, reminding us of the old Wilson's Albany. Plants productive and ripen their fruit in mid-season. Valuable for distant market on account of its firmness.

Senator Dunlap (Perfect Flowers).—Fruit is of good size, regular and attractive in form, deep red in color without and within, firm in substance and excellent in quality. Its season is among the earliest and it continues productive nearly a month. Plants good, vigorous growers; valuable for all purposes.

Sharpless (Perfect Flowers).—One of the most popular strawberries of the day. The plant is exceedingly large and vigorous, quite free from rust or blight. It demands well enriched soil and is one that will bring the home or market grower fine fruit. Berries are very large, dark crimson in color and of first quality.

THE COST TO GET AN ACRE OF STRAWBERRIES IN BEARING.

We have been asked this question so often, and as it is so generally discussed, the writer has thought best to give his readers at least an approximate idea. While the cost will vary somewhat under different conditions and in separate localities, yet we feel quite sure that the figures we have prepared below will be found pretty accurate and reliable;

In arranging for the planting of an acre of strawberries I would want land that had been previously cropped with fruits, grains or vegetables. If the soil is in a fair ordinary state of fertility, I would want ten large team loads of the best stable manure that could be procured; I would prefer to have this manure half horse and half cow droppings mixed together and thoroughly rotted. Such manure as this costs us here in the Hudson River Valley two dollars per load delivered on the ground, or twenty dollars in all. The spreading of this manure, plowing, harrow-

ing and fitting ground would cost six dollars. I would use the matted row system for fruiting and would set the plants two feet apart in the row and four feet apart between the rows; this would require five thousand five hundred plants, for the acre. Good strong northern grown plants are worth three dollars per thousand; this means, of course, sixteen dollars and fifty cents for the plants. It would cost five dollars and fifty cents to properly set these plants. I would then use one-half ton of Hardwood Unleached Ashes, or its equivalent; this would cost, applied around the plants after they are set, eight dollars. The fruit stalks should be removed from these plants the first season as soon as they appear; this would cost one dollar for the acre. The ground between the rows would need cultivating five times during the growing season, and this would cost ten dollars. The plants would need to be hoed five times, which would cost fifteen dollars. I would use six large team loads of horse manure to cover the plants with for winter protection, which would cost twelve dollars. The labor of spreading it on the plants would cost two dollars and twenty-five cents. In the Spring as soon as vegetation is well started the coarse part of this covering of manure (and that only) should be raked off the rows of plants and left on the ground between the rows; this would cost one dollar and fifty cents. This manure should be at once incorporated with the soil with the use of a small half mould board plow; the labor for this would cost two dollars. I would follow this plowing a week or ten days later with the cultivator, and would use the cultivator once more after the berries are beginning to form, these two trips of the cultivator would cost four dollars. Weeds will spring up in the rows before fruiting time in the Spring; it is however, a small labor to get rid of these and the cost would not be more than one dollar and fifty cents. Just after the last tillage with the cultivator I would mulch the ground between the rows with newly cut grass; this grass and the applying of it would cost eight dollars. As you will see the entire cost for one acre of strawberries the first year would be one hundred and thirteen dollars and twenty-five cents. For the second and third crop this cost would be reduced fully one half. After the fourth year's fruiting the plants should be plowed under when the ground will be in a high state of fertility and suitable for any crop of fruit, vegetables or grain. These plants would, with proper care, bear four crops of fruit, and would not be at their best until the second year's fruiting. I would have my matted rows for fruiting twenty to twenty-two inches in width and the plants six inches apart in every direction. This would give me ample room for Spring tillage, which I have learned from many years of practical experience on different soils is most essential and necessary for best results.

RASPBERRIES.

Any land that will grow a crop of grain or vegetables will do for Raspberries. There are four families of these, namely: "The Reds," "The Blacks," "The Pinks," and "The Yellows," all requiring the same general treatment. The yellow varieties are used almost exclusively for family use and have little if any value for commercial purposes. The Red Raspberries and the Black Raspberries, commonly called Black

Caps, are extensively cultivated for market where there is usually a good demand for the fruit at remunerative prices. The Pink varieties are grown largely and almost entirely for canning purposes both by the home people and those with large factories. All are good in their natural

state for table use, and when a dozen plants of each are set in the garden we can enjoy this delicious fruit for four to five weeks. We should arrange our selection of varieties to prolong the season for fruit as much as possible, not neglecting that important consideration of best quality when the aim and purpose is to supply our own table. Prepare the ground and manure it the same as you would for strawberries; then make furrows six feet apart and set your plants in these two feet apart, thus forming a continuous row of fruiting, which gives one-third more fruit than could be had from the quite generally abandoned old hill system. Cut back the plants to within six inches from the ground. Set posts twenty feet apart and run one wire $3\frac{1}{2}$ feet from the ground, and train your fruiting cane to the wire. This is the cheapest and best method and is being adopted now quite generally. The canes should be pruned back to within



five feet from the ground and the lateral branches should be pruned back to fifteen inches.

The Bush System of growing Raspberries of all kinds is to plant in furrows three feet apart. The plants should be trained in bush form: this is done by Summer pruning or pinching back of the leader and lateral branches. The leader or main branch should not be over three and one-half feet from the ground; the lateral branches should be started near the surface of the soil and should not be more than eighteen inches in length. It requires considerable pinching back during the growing season to make a plant of this formation, but it is the only pruning needed and the bush goes into Winter weather in good robust condition. There is no necessity to use posts and wire or anything else to trail to, when this method of growing is adopted, as the plants are

strong, bushy and vigorous and well able to hold up their fruit from the soil. In the large Raspberry fruiting districts this system of growing is used almost exclusively. The severe annual pruning back has a tendency to make the plants short lived, and plantations cultivated under this treatment rarely last more than five or six years at the best. With the continuous row system of fruiting the plants will be at their best for ten to twelve years. In any case, the old wood should be cut out each year. This can be done any time after the fruit is gathered until along in the following Spring. The first year that Raspberries are set we can crop the ground between the rows with any of the low growing vegetables like Potatoes, Beets and their kindred. The plants will come into fruiting the first year after being planted and under ordinary favorable conditions should produce quite a full crop of fruit; they will then need the use of all the land. Fertilizers should be used while planting and afterwards of the same kinds and in the same quantities per acre as for Strawberries. A light application of well rotted manure on the surface of the ground around the plants during the Winter months is very beneficial.

Winter Protection.—In some of the cold Northern climates the Raspberry occasionally winter kills. Where this is apt to occur it is the practice to lay down the fruiting canes in November or December and cover one-half or more of it from the tip end with soil. This covering need not be heavy. This is resorted to when the fruit is grown for the family use; it is quite too expensive when we are growing fruit with a view to profit for commercial purposes, yet we find a few large growers protecting their Raspberries in this way; they, however, use the old hill method of fruiting, leaving four to six canes in each hill and tying them to small stakes. These hills are planted four feet apart in the furrows, two plants set together in each hill; the distance between the rows should be six feet, then, of course, this protection can be practiced with the continuous row system of fruiting, however, not with the bushy plant method, as it would be impossible to lay these stocky plants down for this purpose. Be it remembered, however, that it is only in rare instances where it is necessary to go to the expense and trouble of this Winter covering of the canes with soil. We have a good list of old reliable hardy standard varieties of American origin that will rarely be winter killed. These will be carefully selected and named hereafter.

Anthracoce.—This is a fungus disease that occasionally attacks the canes of the Raspberry close to the ground. The canes become brown and rusty and should be removed at once and burned, otherwise it will infest the entire plantation. When it first attacks the plant you can notice the results from it on the foliage which becomes sickly looking.

Cane Blight.—This is also a fungus disease and attacks the canes in all parts, the wood turning black and shriveling away. The part of the canes thus affected should be cut away and at once burned.

If at any time your plants show signs of leaf rust, spray at once with the Bordeaux Mixture, without the Paris Green. You should not spray while the plants are in fruiting.

Spraying.—This should be attended to in the early Spring before vegetation starts, using the Bordeaux Mixture without the Paris Green. When this spraying is thoroughly done at this season there is little danger from any of the fungus troubles heretofore named.

Varieties.—The selection of varieties hereafter named is on the whole the result of years of practical experience and experiments by the author.

We have endeavored to give the very best list graded from a host of sorts, many of which have been quite generally discarded and others that are still on the list but of comparatively little value.

RASPBERRIES—RED VARIETIES.

Cuthbert.—The best late hardy Red Raspberry, a variety that adapts itself to all conditions of soil and climates, succeeding admirably North, South, East and West. The canes make a strong, vigorous growth and are exceedingly productive of fine large, late, good flavored fruit, which holds its size to the end of the season. The berries are dark crimson in color and quite firm. One of the few reliable standard varieties we have to-day. Valuable for home use and for market.

King.—Round, medium size; light crimson color; moderately firm and of excellent quality. One of the earliest Red Raspberries; canes strong growers and very prolific; valuable for the home table.

Marlboro.—The canes of Marlboro are strong, hardy and productive, the fruit is as large as the Cuthbert, crimson in color, holds out large to the last picking and arrives in the market in good condition; perhaps as good as any berry we have in cultivation; grown extensively for commercial purposes and for home use; ripens early in the season.

Miller Red Raspberry.—Berry is round in shape, color bright red; core very small; does not crumble, making it the firmest and best shipping berry in existence, has a rich, fruity flavor. The time of ripening is the very earliest; good for all purposes.

The Loudon Raspberry.—The fruit is very large, exceptionally firm, of fine, rich, attractive color, and of the best flavor. The canes are fully as large and strong as the Cuthbert. Thus far the Loudon has proved entirely hardy here with us. It ripens three or four days after the Marlboro, and continues in fruiting a long time. The fruit is very firm and makes a good shipping berry; a splendid variety that should be in every selection.

Thompson's Early.—One of the best early varieties. Plant a good grower and hardy. Commences to ripen before strawberries are gone. A very profitable early variety to grow for market.



MARLBORO.

RASPBERRIES—BLACK VARIETIES.

Cumberland.—In hardiness and productiveness it is unexcelled by any other variety. In size the fruit is simply enormous, far surpassing any other sort. The berries run seven-eighths and fifteen-sixteenths of an inch in diameter and are of handsome appearance;

The bush is exceedingly healthy and vigorous, throwing out stout, stocky canes, well adapted for supporting their immense load of large,

beautiful fruit. We advise the planting of at least a dozen plants of this promising new variety. A profitable berry for market and unexcelled for home use; one of our favorite berries; ripens early.

Gregg.—Requires a good, strong soil to produce best results, and responds liberally to generous treatment. The canes are large and productive of fruit of the very largest size, not as fine in quality as some of the other sorts, but a good market fruit; Gregg ripens late in the season.

Kansas.—A most desirable Black Cap in every respect. The canes are magnificent, strong, vigorous growers, of ironclad hardness, they are immensely productive of jet black fruit of large size and are very attractive, hence a first class market berry, as well as one of the best for the family use. The Kansas ripens in mid-season, and the fruit is very firm, but its superior flavor is the principal reason for its growing popularity. A fine berry in every way; quality unexcelled.

Mills.—The growth very vigorous, fruit medium to large, firm, fine flavored, juicy, sweet, very good to best in quality. Productive and remains a long time in fruit; a good berry for all purposes.

Munger.—The fruit is black and resembles Gregg very much. It is a better flavored berry than Gregg, tougher in texture, and therefore a better shipper. In size it excels Gregg by almost 25 per cent., being extra fine for canning and evaporating. The canes, too, resemble Gregg, are free from disease, upright in growth; a good market fruit and also valuable for home use.

Ohio.—Ripens mid-season, between Souhegan and Gregg. The fruit is nearly as large as the Gregg. Very uniform in size and holds out large to the last picking. The color is nearly as black as the Souhegan. It is of splendid quality, firm, and a very excellent shipper; valuable for market.

Palmer.—The first to ripen; fruit good size and quality; canes wonderfully productive, vigorous and hardy; ripens its crops in short time; one of the best varieties of Black Caps; desirable for market on account of its fine appearance and high quality; one of the best for the home planting.

Souhegan.—Enormously prolific of jet black berries, and the best in quality of any Black Cap; the very earliest to ripen, coming with the later varieties of strawberries; perhaps the best early variety we have for all purposes.



KANSAS.

RASPBERRIES—PINK VARIETIES.

Cardinal.—Berries are of great size, purplish-crimson in color, exceedingly firm, rich and sprightly, with full raspberry flavor. Of special value for canning. It propagates from tips like the Black Caps; the canes are extremely large and vigorous growers and immensely productive; ripens in mid-season; good for home use for canning and profitable for market where there is a demand for it.

Columbian.—The Columbian is a vigorous grower, with large fruiting canes, fully as large as the Shaffer, which is the most rampant grower and prolific yielder we have yet seen and the fruit is the largest grown. In quality it is an improvement on the Shaffer, being sweeter when ripe and of higher flavor. We have planted it on several soils and in each instance



CUMBERLAND.

it is a wonder of productiveness. Twenty-five plants of this variety will furnish fruit enough for a large family through the season, besides you will have a great plenty for canning purposes; grown largely for canning and drying; ripens late in the season.

Shaffer's Colossal.—The canes are strong, hardy and productive of large, handsome fruit, the last of the berries even larger than the first. It is a valuable addition to the cap family and especially valuable for preserving; ripens late.

RASPBERRIES—YELLOW VARIETIES.

Caroline.—A seedling from the old Brinkle's Orange which was of foreign parentage and too tender for our climate. The canes of Caroline are moderately good growers, exceedingly productive, the fruit fair in size, rather soft and crumbly, color pale salmon, sub-acid and fair in quality; valuable only for home use.

Golden Queen Raspberry.

Yellow variety—The Queen is larger than Brinckle's Orange, firmer, of a much better color; the canes are larger, more productive, and the best of all, they are hardy; the lack of hardiness having made Brinckle's Orange an unpopular fruit. No first-class home fruit garden is complete without a good bed of it. It is, without doubt, one of the best flavored fruits we have ever tasted, and this voices the opinion of many who have tested the berry on our grounds. We have fruited it for many years here on our grounds and on different soils; the canes have never been harmed in the least during the winter months and they have always borne an immense quantity of fruit. This variety is now at the head of the raspberry list for table use and is being planted more largely each year. For some reason our best markets discriminate against the yellow raspberry, hence we do not recommend it for that purpose.



GOLDEN QUEEN.

DEWBERRY.

Plant the same as the Blackberry.

Lucretia.—Ripens a few days in advance of the blackberry, and is productive of large, fine flavored, luscious fruit without any core. A very desirable berry for the home use for all purposes, especially valuable for the table, where it will be highly appreciated for its large size, beautiful color and superb flavor. It is also profitable as a market berry and is grown extensively for this purpose by many large fruit growers, becoming more popular each year. A very important consideration in the growing of the Dewberry, and very seldom practiced, is training the vines to wires, very similar to the manner in which grapes are grown. It is surprising how this fruit is improved in quality and quantity by this mode of growing. You are enabled to ripen the fruit much earlier, the sun being allowed to reach all sides of the fruit—as it cannot do if they are allowed to grow in the old style of trailing on the ground. Another advantage is the fruit can be kept perfectly clean, an important matter and very essential in the sale of fruit.

Austin's Improved.—A variety from Texas, where for several years

it has far surpassed all other sorts in size and productiveness. Berries glossy black, extra large, superior quality, sweet and melting to the center. N. Y. Exp. Station and others give excellent reports of their trials of it in the north.

DWARF JUNE BERRY.

Plant in rows four feet apart and cultivate and prune the same as for the Currant.

A very desirable fruit that we consider a valuable acquisition to the garden fruits; the bushes resemble the Currant in habit of growth. The fruit is twice the size of the Huckleberry, matures in June, is round, reddish purple at first, changing to bluish black when fully ripe. In flavor it is similar to the swamp huckleberry, which it resembles in appearance also. It is rich, sub-acid, delicious, and is excellent for cooking. A very profuse bearer. It is hardy, succeeding well in cold climates, also being adapted to warm countries.

JAPANESE WINEBERRY.

Plant and cultivate the same as Raspberries.

We have fruited it for a number of years. It is a very interesting fruit, belonging to the Raspberry family, and is a splendid grower; hardy and very prolific. The canes are covered with purplish red hair. The fruit is borne in clusters and each berry is at first tightly enveloped by a large calyx, forming a sort of burr, which is also covered



with purplish red hair so thickly as to present the appearance of moss rose buds. When the fruit matures, this bud pops open and displays the

fruit. In color it is a bright red, and the plant is beautiful and really an ornamental bush, that could be grown in the lawn, where it would produce delightful fine flavored fruit, besides giving a pleasing effect in beautifying the home grounds. The bushes are very productive, the fruit ripening after the late red Raspberries. Commands a higher price in the market than most Red Raspberries; in fact we have made several tests of it in several markets with results that surpassed our expectations. This is one of the finest breakfast fruits we have ever eaten, just acid enough to be sprightly and of high quality; valuable for all purposes.

BLACKBERRIES.

The writer has cultivated this fruit in a large way for several years, harvesting many thousand quarts during the fruiting season. They have always sold to good advantage, the price ranging from ten to fifteen cents per quart for the different seasons' crop, thus making it, as all fruit growers know, one of the most profitable fruit crops to grow. The Blackberry is one of our most reliable paying crops, and should be cultivated by all who grow fruit for a living, while no well-provided amateur fruit garden should be without this luscious, healthy berry.

Any good ordinary farm land that will produce a crop of grain or vegetables is admirably suited to the profitable cultivation of the Blackberry. It succeeds well in partial shade and can be grown successfully between the rows of young fruit trees. Prepare the ground the same as you would for Raspberries or Strawberries, using the same kind of manures and in the same quantities per acre as advised for Strawberries. It has been the practice quite generally with those who grow Blackberries in the home garden to plant them along the fence line. We do not recommend this way, as the plants are almost sure to be neglected and overgrown with wood; the bed soon becomes unmanageable and worthless. The better plan is to set your plants in a row in the garden where they will oblige you to keep them under control by pruning and removing of old and superfluous wood, and it must be remembered that this is not a very difficult or expensive work when attended to at the proper time. Blackberries can be grown successfully under the three systems previously mentioned for Raspberries, except that as they are more vigorous growers they should be planted a greater distance apart. They could not be laid down and covered with soil for Winter protection like the Raspberries sometimes are, the canes being too strong and stiff for this purpose; however, it is quite unnecessary to resort to this means with Blackberries as they are practically a hardy plant in all parts of the country. Rarely indeed do we hear of the plants being Winter harmed; when they are injured, it is on account of exceptionally unfavorable Winter weather, or perhaps a weakened condition of plants caused by injudicious late cultivation in the Autumn months, which produces an excessive wood growth that is insufficiently matured before cold weather arrives and destroys it as well as the entire plant for fruiting the coming season, it being necessarily of low vitality. Low growing vegetables can be planted to good advantage between the rows the first season they are cultivated; after that the Blackberries will need all the room and should produce a good crop of fruit the first year after being planted. After the

plants have first been set out they should be cut back to within six inches of the surface of the ground.

The Continuous Row System.—We consider this the best and most profitable way to fruit the Blackberry. Set the plants eight feet apart between the rows, and two feet apart in the rows. Set posts in the row twenty feet apart, and run two wires on these posts. Run one wire three feet from the ground and the other wire five feet from the ground, and trail and tie your fruiting canes to these wires. It is best to use the two wires, as the plants when in fruit will be of considerable weight. The canes can be fully six feet in height and the lateral branches eighteen inches in length. With the bush system the plants should be eight feet apart between the rows and three feet apart in the row, pruned back to within four feet from the ground and the lateral branches fifteen to eighteen inches in length.

The Hill System is to plant eight feet apart between the rows and four feet apart in the row, setting two plants in each hill; let them form into hills of five to six fruiting canes, drive down a good strong stake to each hill and tie all to them. Your plants can be five to six feet in height, but the lateral branches should be pruned back to ten inches in length.

The Blackberry is quite susceptible to the Anthracnose. This should be treated in the same way as explained for the Raspberry. If the Rose scale appears on your Blackberries use the kerosene and water formula mentioned on page 12; using six parts of water to one part of kerosene. Just as soon as your canes show the least sign of rust cut it out at once and burn it, otherwise it will in time spread over the entire plantation.

Varieties.—There are a few very good sorts that are valuable in Southern New Jersey and in other Southern States that are not hardy enough for the Northern climates; these will be especially mentioned in the descriptions that go with the variety.

Agawam.—Medium size, jet black, sweet and tender, hardy and productive. Very desirable for family use; one of the best flavored Blackberries we have ever eaten; ripens early.

Ancient Britton.—One of the best varieties. Very vigorous, healthy and hardy, producing large fruit stems, loaded with good-sized berries of fine quality that carry well; a valuable market variety and one grown quite extensively for that purpose; ripens late in the season.

Early Harvest.—A strong, healthy grower, very early and productive; good quality. A desirable home berry and profitable for market in the Southern States; not hardy enough for the Northern Winters.

Eldorado.—In flavor it is one of the most delicious berries we have eaten. It has never winter killed with us or failed to produce a full crop of the finest fruit, while it is of superior flavor and very large. The fruit has no hard core, but when placed in the mouth melts away, being most pleasing to the taste and very sweet. The fruit is jet black, in large clusters, ripening well together. Its keeping quality is unsurpassed; exceptionally hardy canes; good for all purposes; ripens second early.

Erie.—It is the best hardy variety yet introduced, very productive, foliage clean and healthy, free from rust; fruit large, about the size of Lawton; ripens early; a valuable and profitable standard variety and largely grown for commercial purposes. This is one if not the leading berry, and is more largely fruited than any other variety we know of; ripens quite late in the season and continues in bearing a long time.

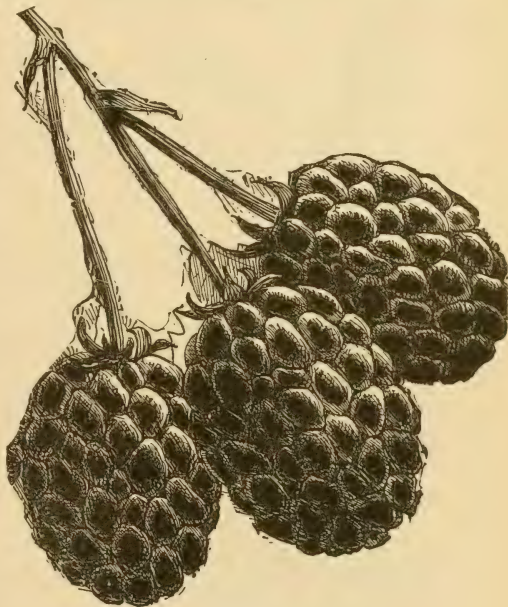
Iceberg.—The fruit is not only white but so transparent that the seeds, which are usually small, can be seen in the ripe berries. This is called the White Blackberry, and is more or less of a plaything in the garden; quality not up to the standard; ripens in mid-season; canes hardy.

Kittatinny.—A popular home variety of great value; quite susceptible to rust; fruit, large, long, and ripe as soon as black.

Lawton.—An old favorite, esteemed for its productiveness and large size. Like Kittatinny, it is of strong, erect growth, but much more free from rust. The berries are large and delicious when fully ripe. It succeeds over a wide range of country, and is one of the best standard sorts, but has now been superseded by Erie, which is hardier. Mid-season to late.

Lovett's Best Blackberry.—It has now been fruited in almost every State in the Union, and its hardiness and other valuable properties conclusively proved by practical field tests. We have found this to be a good grower. The fruit is very large, handsome and of excellent flavor; canes hardy; valuable for all purposes; ripens in mid-season.

Mersereau.— This variety originated in Western New York, where the mercury falls below zero each winter. The plants have never yet been injured in the least during the winter months. It remains in bearing as late as September 1 to 10, the fruit selling for two or three cents higher per quart than other varieties. Its extreme hardiness, large size, great productiveness and delicious quality makes it a valuable acquisition; valuable for market and home use; canes hardy; ripens in mid-season.



MERSEREAU.

Minnewaski.— A valuable variety for home use and grown largely and profitably for market by many fruit growers. Canes hardy, very productive, strong-growing, free from disease; fruit large, early, of good quality; a good reliable hardy variety; ripens second early.

Ohmer.—Five points which recommend this berry: hardy, late, large, productive and of the finest flavor. As large as the largest, as hardy as any good berry; very productive, strong grower, finest quality and late; grown largely for market.

Rathbun.—A new Blackberry that proved to be entirely hardy, having withstood a temperature of fifteen degrees below zero uninjured.

The berries are large, with large pips and small seeds. They have no hard core, in fact no core is perceived in eating them; all is soft, sweet, luscious, with a high flavor; canes very hardy; good for commercial purposes; ripens rather late in the season.

Stone's Hardy.—Very good for a cold climate. Perfectly hardy, strong grower; requires thorough pruning, as it sets more fruit than it can mature under ordinary cultivation. A good family berry; ripens in mid-season.

Taylor's Prolific.—Where hardiness is of importance this is an excellent variety. Canes of strong growth and very prolific; berries larger than Snyder, sweet and rich; ripens late, after main crop of other kinds are gone. One of our best market varieties and extensively grown.

Wilson, Jr.—An early variety of large size and handsome appearance, productive, of splendid color, and an excellent shipper, becoming more popular each year. One of the finest market berries we have, but a little tender for our Northern latitude, where it occasionally winter kills; exceptionally valuable for all purposes where it can be grown.

CURRENTS.



There is perhaps no other specie of the small fruit family, with the possible exception of the Strawberry, that is so generally adaptable to our varied conditions of soil and climates as the Currant and probably none other of these fruits are so easily, successfully and profitably cultivated over such a wide range of country. For several years past there has been a surprisingly and constantly increased demand for this valuable fruit. At the present time it is one of the most popular of all the small fruits. Its great and growing popularity is probably owing to the fact that the fruit is desirable and available for so many separate purposes. It must be admitted that the demand for this fruit has been pretty generally supplied; nevertheless, we find good fruit bring good paying prices to the grower one year with another and the large growers of currants seem to be enlarging their plantations, which of itself, is good proof that this is one of our most profitable fruit crops, and the writer can, from years of experience, testify to the correctness of this observation. We have in the past years grown and marketed many crops of this fruit that have brought

us remunerative prices, so that we are prepared to say that for commercial purposes the Currant can be made a decided success. Then for the home garden there is scarcely any fruit more useful and desirable in so many different ways; in fact, no private garden is complete without a good selection of the red, white and black varieties that will prolong the season for fruit as far as possible. Fortunately, this can be done with a very few of the best varieties.

Preparation of the Soil.—Any land that will answer for the ordinary farm crop will do for the Currant. The ground should be prepared the same as for Strawberries, as explained on page 49. Firm the soil thoroughly about the roots with the use of the feet; the plants should be pruned back one-half at the time of planting—the after pruning is very simple and easily done, removing one-half the new wood each year and also any old or dead wood. Neglect of annual pruning will soon bring the bush into a large and unfruitful plant, besides the fruit will depreciate both in size, color and quality, when grown under this neglected condition.

The Two Systems.—There are two separate ways of cultivating the Currant. The Row System, is to plant four feet apart in the row and five feet apart between the rows, with this method you can only cultivate your plants one way.

The Hill System, is to plant five feet apart each way, grow the plants in the hills and cultivate both ways. This plan minimizes the hand labor to a considerable extent, as quite all of the tillage can be done with the use of the plow and cultivator, in fact, a crop of Currants grown in this way can be matured quite as cheaply as a crop of corn or potatoes. When one is planting in a large way, and when it is practicable, this is decidedly the best and most economical method of growing. This system requires 1,750 plants for a solid acre of Currants.

When to Plant.—Currants should be planted as early as possible; we must remember that this is one of the very first fruits to start vegetation in the Spring, consequently, they should be transplanted early, while in dormant condition. March and April are the months to plant in the Spring, the earlier the better. Currants are one of the first fruits to lose their foliage. In the Autumn, therefore, they can be planted with advantage any time after September first until December first, and between these dates is perhaps the best time to plant the Currant. When planted at this season it is beneficial to place a large forkful or two of manure about each plant as a little protection during the Winter months and as a fertilizer.

The Currant Worm.—This is perhaps the worst enemy we have to contend with in the cultivation of this fruit. It is a long green worm that attacks the foliage early in the Summer, usually about June first or just after we have had two or three days of very warm weather. If left unmolested they will soon defoliate the bushes, when the fruit will become scalded and quite worthless from the direct hot rays of the sun. Fortunately, we can cope with this enemy easily and cheaply. As soon as they appear, at once spray with the Bordeaux Mixture and Paris Green added as formulated on page 11, this single spraying if thoroughly done will generally be sufficient and all that is needed; however, if another brood appears spray a second time as before. The Bordeaux spray will also eradicate any possible fungous disease that your plants may be troubled with. This spray is cheap, efficacious, easily applied and will kill the worms in a few hours.

Cane Blight.—This attacks the Currants at different growing sea-

sons of the year. We have observed that old plantations are most susceptible to it. The moment it is noticed on the plant the part thus affected should be cut out and burned at once and if you think the entire bush is contaminated, better remove it bodily rather than run the risk of spreading it over the entire plantation.

Life of the Currant.—When grown under good, fair, average tillage, the Currant will bear profitable crops from eight to twelve years without resetting. There is no other single plant so adaptable and that can be used so successfully and advantageously. When grown with the tree fruits, the Currant does well in partial shade and, strange as it may seem, it is the fact nevertheless, that when grown under these conditions the size and productiveness of the fruit is increased. For this reason, as well as for the other favorable characteristics of the plant, it is the most desirable of all the small fruits to use in connection with the tree fruits. In planting a young orchard of apples, pears, peaches or other tree fruits you can plant Currants both between the trees in the row and also between the rows of trees. The Currants can be fruited in this way for six to eight years or until the trees come into full bearing, without, in any way interfering with or retarding the growth of the trees; both can be tilled at the same time, and practically at the same expense; at least, the extra expense of labor for both will be very much minimized.

Fertilizers.—We have found stable manure the best fertilizer for the Currant; the best way to apply it is in the Fall. Use two or three good forkfuls around each bush and let it remain on the surface of the ground during the Winter months. In this way we accomplish the double purpose of feeding the plant and Winter protection. Where you cannot get the stable manure you can use two tons of unleached wood ashes to the acre, or one ton of some good commercial fruit and vine fertilizer to the acre; or the following, well mixed together, is very desirable: 600 lbs. of pure ground bone, 300 lbs. of muriate of potash, 150 lbs. of nitrate of soda. Any of the above fertilizers should be broadcast in the Spring, cultivating it in the soil.

Varieties of Currants.—The list of varieties of Currants has been kept well under control. Unlike many of our other fruits, we have not a superfluous and confusing list to choose from. Nevertheless, we will trim the present list down as far as consistent and name only those varieties that we can recommend from practical experience. You can rely on those that follow to give the best results obtainable from this fruit.

RED VARIETIES OF CURRANTS.

Cherry.—This is the old established standard variety of Red Currant. Very prolific, of fine large bunches of most beautiful crimson berries. A splendid variety for home use, and excellent as a market fruit.

Fay's Prolific.—This has fully sustained the broad claims which were made for it by the disseminator upon its introduction; and it is decidedly the best Red Currant we have. It has been widely planted, and has given general satisfaction. The bush is a strong grower, wonderfully prolific, and comes into bearing early. Fruit large, bright red, and of good flavor, and less acid than Cherry. Those who want a prolific Red Currant should plant this variety. Grown extensively for market.

Perfection.—A cross from White Grape and Fay's Prolific; the color is a beautiful bright red. Size as large or larger than the Fay, the clusters averaging longer. The size of berry is well maintained to the end of the bunch. The Perfection has a long stem from point of attachment on

the bush to the first berry, making it easy to pick without crushing any of the berries. The Perfection is a great bearer, resembling its parent the White Grape in this respect. The plants should be kept well cultivated and fertilized, as should all heavy bearers. Quality; rich, mild, sub-acid, plenty of pulp with few seeds. Less acid and of better quality than any other large currant in cultivation. Valuable for market purposes.

Red Cross.—This is undoubtedly a valuable addition to our good varieties of Currants and is well spoken of by all who have seen the fruit. Jacob Moore, the originator, says: "Red Cross clusters are long and have well necked berries, double the size of Victoria, and far superior in quality to Cherry or Victoria. Nothing will compare in quality with Red Cross but White Dutch, which is too small. Red Cross was first fruited in 1889. I have seen the fruit growing in such masses as to hide the upper branches from view. It is later than Cherry; the plant makes twice the growth of Cherry, and yields two or three times as much fruit. I recommend it with confidence. I consider Red Cross one of the best of the new Currants." Good for home and commercial use.

Victoria.—This is the latest variety we have in Currants, ripening ten to twelve days later than the Cherry. Especially desirable for home use, and also valuable as a market berry, its lateness extending the season for fruit.

Wilder.—This grand variety is grown very extensively for market. One of the strongest growers and most productive. Bunch and berries very large, bright, attractive red color, even when dead ripe; hangs on bushes in fine condition for handling as late as any known variety. Compared with the celebrated Fays, is equal in size, with longer bunch, better in quantity, with much less acidity; ripens at same time, continues on bush much longer, fully as prolific, in some trials largely outyielding it, also valuable for table use.

WHITE VARIETIES OF CURRANTS.

White Dutch.—Bush an upright grower, vigorous and very productive. Clusters two to three inches long; berries average medium size, are translucent and a little darker than White Grape; quality excellent. Ripens early.

White Grape.—We have fruited this largely and the fruit brings us the highest prices in the market. Very large yellowish white; sweet or very mild acid; excellent quality and valuable for the table; the finest of the white sorts. Very productive and a most desirable Currant. The best table Currant of all.



White Imperial.—Ripens somewhat later than the White Grape. Bush vigorous and very productive. Clusters large; berries very large, sweet and most delicious. Said to be the best of the White Currants. valuable for the home table.

BLACK VARIETIES OF CURRANTS.

Black Champion.—Very productive, large bunch and berry; excellent quality, strong grower. The leading, well-tested black sort. Grown largely by some fruit growers for market, where it brings good prices.

Black Victoria.—A strong, vigorous grower, making a neat bush of unfailing productiveness; fruit of fine flavor and enormous size, the largest black in cultivation.

Lee's Prolific.—The best European Black Currant yet introduced, and one that makes a great advance in the fruit of its class. It is earlier than Black Naple, and of superior quality; larger, longer clusters, and even more productive than that prolific kind. Extensively cultivated for commercial purposes.

GOOSEBERRIES.

This is quite a desirable and valuable fruit and used for many purposes by the housewife, and a few bushes should be in every well provided home garden. We know some few fruit growers who grow this fruit profitably one year with another and where there is a good market it will be a good fruit to grow with the Currant, as it needs the same general culture and treatment. The writer's experience, however, has not been as satisfactory as he would wish when this fruit has been cultivated for market purposes. Occasionally the market has been favorable for this fruit and we have received eight to ten cents per quart for it right through the season; these are, of course, good paying prices. We have learned from experience, however, that these prices are quite exceptional and would be followed by a year or two or more when the fruit would sell for two and three cents per quart, while we have seen twenty to thirty crates of this fruit with a New York commission house kept for several days and then destroyed, as there was no demand for them. Then the market has been such that our commission men have written us not to ship any of this fruit and it quite often has been left on the bushes unpicked. We advise beginners to plant cautiously of this fruit until they are first sure of their market.

Gooseberries require the same treatment as heretofore recommended for the Currant, in planting, cultivation, pruning and spraying. Plant in good rich soil and give a liberal dressing of manure every season. Like the Currant, they do best in partial shade. It is very beneficial to mulch about the plants, using any handy material you have on hand for this purpose, such as short straw. To prevent mildew, spray bushes soon as leaves appear and during the Summer with potassium sulphide (Liver of Sulphur) one ounce to four gallons of water. The green worm known as the Currant worm also attacks the Gooseberry and should be treated with the Bordeaux Mixture as recommended for the Currant.

AMERICAN VARIETIES OF GOOSEBERRIES.

Downing.—Very popular, large, pale green, good quality; bush vigorous, hardy and prolific. One of the best varieties ever introduced. Valuable for market and the home table.

Houghton.—A medium sized American variety; fruit smooth, red, tender and very good; bears abundant and regular crops. Free from mildew and sure to bear a crop even under neglect. Good only for home use as it is too small for market.

Josselyn.—(Red Jacket.) The plants are strong, clean growers. An American seedling of large size; smooth, prolific and hardy, of best quality. Has been well tested over a wide extent of territory by the side of all the leading varieties, and so far the freest from mildew, both in leaf and fruit, of them all. A wonderful cropper, with bright, clean, healthy foliage. Valuable for commercial purposes and the home table.

Pearl.—An exceedingly prolific variety that has been well tested and ranks No. 1 in healthfulness, vigor of growth, freedom from mildew and productiveness. Same color as Downing; seems to possess all the good points of that variety with a little larger fruit and rather more prolific. A splendid market variety.

Smith's.—Large, pale greenish yellow, skin thin of excellent quality, being unsurpassed by any other variety for table use or cooking; bush moderately vigorous and exceedingly productive. Especially valuable for home use.



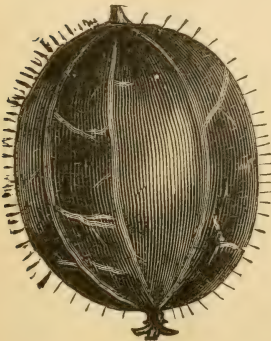
DOWNING.

ENGLISH VARIETIES OF GOOSEBERRIES.

This family of Gooseberries are much more susceptible to mildew than the American sorts, they are, however, fine, large fruit of high quality and command the highest market prices.

Industry.—The best English Gooseberry yet introduced. Of vigorous, upright growth, greatest cropper and more free from mildew than any of the English varieties; berries of the largest size, one and one-half inches in diameter, and one of the most excellent flavor, both pleasant and rich; color, when fully ripe, dark red. One of the leading market sorts and probably grown more extensively than any other single variety; also valuable for home use. A plant of the Industry in full bearing is a most wonderful sight and not soon forgotten.

Keepsake.—Fruit very large, straw colored, of excellent flavor; carries well to market. Bloom is well protected by early foliage, making it one of the surest croppers. One of the best English sorts for our climates. Valuable for all purposes.



INDUSTRY.

Lancashire Lad.—One of the largest and best of the English varieties. Fruit smooth, bright red, extra size; fine quality. One of the best dessert berries. Bush strong grower and productive. Its fine flavor makes it especially desirable for the private garden.

Chautauqua.—A valuable berry, probably of foreign origin, but showing less tendency to mildew than any of its class. A vigorous, upright grower, and wonderfully prolific. Berries large, pale yellow, smooth, very sweet, and of exquisite flavor. Desirable for market and also the home table.

Columbus.—Bush a strong, robust grower; foliage large and glossy. Fruit large, oval; skin greenish yellow, smooth; of the highest quality; an excellent variety for home use.

HARDY GRAPES.

Within a radius of twenty miles of the writer's home the grape is cultivated very extensively, perhaps more largely than in any other section of the country. The growers here in this fruit growing region along the Hudson River Valley and in the interior towns are, as a rule, progressive, up-to-date men, and if they excel in any particular branch of this industry it is in the perfect cultivation and production of this fruit. Here the grape is grown to perfection, the climatic conditions are conducive to the growing of the choicest and best flavored fruit, and these practical men take advantage of this opportunity and grow the fruit in a large way, and it can be safely said that one year with another it is as good a paying crop as they produce. Ten to thirty acre vineyards are no uncommon sight in these parts and the tillage so clean and thorough that during the growing and fruiting season it is a splendid sight and inspiration to go through these plantations. I can remember the time, when an old pioneer grape grower here at my home, sold his Concord Grapes at twenty-five cents per pound in the New York City market. Of course, no such prices as these exist at the present time, nor are they likely to again; yet good remunerative prices can be obtained for a fancy high-class fruit, neatly packed in small packages. At the present time grapes are grown more largely for wine than ever before in the history of the country. It is now pretty generally understood and conceded that we can manufacture quite as good wine here in this country as we have been importing at high prices from the wine districts in France. We are pleased to be able to make this statement and to know that at last we are beginning to appreciate the possibilities that are at our own door and to take advantage of them in this available and practical way. The above remarks, are of course, principally intended for the grower for commercial purposes. It is perhaps superfluous for us to urge the cultivation of this delicious, health imparting fruit for the private garden. Every one knows what a grand fruit it is. Most all know the general adaptability of the grape to our varied conditions of soils and climates. The soil that will not produce this fruit is poor indeed and hardly fit for any other crop. It is positively the easiest to cultivate and at the same time the most grateful of all the fruits. It can be grown in so many different ways and in such a

variety of nooks and corners that any one with any land at all can grow it successfully with but little trouble.

There is scarcely a yard so small, either in country or city, that room for one to a dozen or more grapevines cannot be found. They do admirably trained up to the side of any building, or along the garden fences, occupying but little room and furnishing an abundance of the healthiest of fruit.

Make the soil mellow, and plant the vines somewhat deeper than they stood in the nursery. Plant about eight feet apart by the fence or



building. For vineyard, make rows eight feet apart. For strong growing kinds, like Concord or Niagara, plant ten feet apart in the row, and for light growers, like Delaware, plant six feet apart in the row.

Dig the holes about two feet wide and fifteen inches deep, loosening the earth thoroughly in the bottom placing in two or three inches of good surface soil, then cover the roots with three or four inches of the surface

soil, and with the use of the feet firm the soil about the roots; this firming of the soil is of supreme importance.

Pruning Back.—Before the vines are taken to the field the roots should be trimmed back to twelve inches in length; the tops should be cut back to three or four buds; two of these buds should be below the surface of the ground and one or two should be above the surface as leaders. It is desirable to place these roots in a pail of water when doing the planting in order to guard against drying out with the sun and wind. Set a stake near the leader, and as the new growth develops keep it firmly tied thereto; this is all that will be necessary for the first two years. Keep old wood trimmed off and grow your fruit on the new canes. Any manner of pruning that will admit the light and air will answer—there is several systems and all are good for certain purposes.

Preparation of the Soil.—As the author noted in the beginning of his notes on Grapes, most any soil will answer for their production—except land that is excessively wet and which is not fit for any fruit crop. In fact the grape can be grown on side hill locations that are good for little if any other use. The soil should be thoroughly plowed and harrowed and put in first class condition as previously explained for Strawberries on page 49. If you are planting in a large way, you can run deep furrows the same as you would for other heavy rooted trees or plants. This saves a large amount of labor in digging the holes.

Cultivation.—This is very simple and easily done. Keep the soil loose and free from weeds. With the proper, timely and judicious use of the improved plows and cultivators nearly all of the tillage can be done with the use of these tools, reducing the hand work to a minimum. For the first three or four years after the new vineyard has been planted, or until the vines become fully established and developed, you can with good advantage grow annual crops of low growing vegetables in connection with your grapes. Then be it remembered that it is the general practice among commercial growers to grow Strawberries between the rows of young vines for three or four years or more, and some growers utilize the ground indefinitely for some other fruit or vegetable crop. Currants is the fruit crop that is generally grown between the young vines in the row for the first two years after being planted. This practice gives us an income from our land at once, and makes the cost of labor for each crop comparatively small. Certainly more fertilizers are needed for this extensive cropping, and the grower will have to determine this for himself. Conditions and observation will be his best and safest guide along this line.

Fertilizers.—In the beginning, before we plow our ground for grapes, if the ground is not in a high state of fertility we should give it a liberal application of thoroughly well rotted stable manure. Eight to ten tons to the acre is none too much. With the proper and necessary use of the plow and harrow in preparing the ground this manure will be pretty thoroughly incorporated with the soil; then after the roots are well covered with soil it is beneficial to add to each plant one large forkful of this well rotted manure, and then fill in the soil; level with the surface of the ground. In this way the manure will not come in direct contact with the roots, yet they will be in a short time stimulated and benefitted by it. If stable manure cannot be procured you can use raw bone meal, about 600 pounds per acre, with about 300 pounds muriate of potash, or two tons of good, unleached hardwood ashes or one ton of some complete fruit and vine manure. These should be applied broadcast before the last harrowing of the land. A double handfull can be placed

in each hole after the roots have been well covered with soil. In the absence of stable manure we recommend the use of wood ashes when it is a first class article, and to be such it should contain five to eight per cent. potash, two to three per cent. phosphoric acid and thirty to fifty per cent. wood lime. The after feeding of the vines as they fully develop and bear fruit will have to be attended to, using the most convenient fertilizer for this purpose and in quantities to suit the needs and requirements of the plants. A splendid practice is to apply two or three forkfuls of manure around each vine in the month of November or December of each year.

Training the Vines.—The vines can be trained to stakes as before recommended for the first two years and the trellis can be constructed the second Spring after planting if it is convenient to do so. The posts should be 9 feet long; the end posts about 6 inches in diameter at the small end, and the intermediate posts or stakes 4 to 5 inches. Holes four feet deep should be dug for the end posts, these end posts should be well braced. The intermediate posts should be about 20 feet apart, the exact distance to be regulated somewhat by the vines, and may be set in holes, or the lower ends may be sharpened and driven down with a weighty mallet. After the posts are set and properly braced, run one wire $2\frac{1}{2}$ to 3 feet from the ground, the upper wire about six inches from the top of the post, and the middle one half way between the two. The three wires are sufficient for any of the practical methods of training. In putting up the wires they should be fastened to the end posts by winding them twice around them, fastening with staples, and to the intermediate posts by staples. The wires should be nicely straightened, but not drawn too tight. The vines can then be trained to these wires, spreading them out at full length and uniformly over the trellis. In cold climates in the Northern States, and in fact in cold and somewhat unfavorable locations in the Middle States, the vines are untied from the wires and left lay on the ground during the winter months as an extra precaution against possible injury by the cold weather during this season.

Summer Pruning.—This should be done cautiously; in fact we do not recommend the practice further than the pinching back and rubbing off of weak and superfluous shoots and laterals. Severe Summer pruning is positively injurious to the welfare of the vine; the foliage is the life of the plant and to remove any great portion of it during the growing season is to weaken the vitality of the plant.

Thinning the Fruit.—This is of absolute necessity when we wish to produce the very choicest samples of fruit. Our vines should not be permitted to bear any fruit until the third year after being planted. The third year, strong vines with good culture ought to produce six to eight pounds. Care must be taken not to allow the vine to overbear, or it may be so injured as to never recover. Three to four tons per acre is a full average crop for the strongest growers, although good vineyards often produce without injury five or six tons per acre. The less the number of clusters this weight can be put into, the more satisfactory will be the money return from the crop. Hence it is well to thin the fruit, picking off the smallest and poorest clusters.

Spraying.—This is essential to the best results, and should not be neglected under any circumstances. Moreover, it should be done several times during the season. The best spray is the Bordeaux mixture with Paris Green added as formulated on page 11. Make the first application in the early Spring just as the buds begin to swell, and the second applica-

tion when the leaves are two inches in diameter. It is also desirable to make a third application directly after the flowers have fallen. Later if you notice any indications of fungous disease or leaf beetle spray again as before.

VARIETIES OF GRAPES.

There is a large and extended list of varieties of grapes. We will, however, as with the other fruits, cut down this list as far as possible, naming only those that are especially valuable over a wide territory and selecting the sorts that are most hardy and that prolong the season for fruit to its fullest extent. We will classify them in three classes, namely: Blacks, Reds and Whites.

BLACK VARIETIES.

Bacchus.—Vines strong, vigorous growers and hardy; bunch medium; berry, small, round, juicy, sprightly. A seedling of Clinton which it resembles but is of better quality. A valuable wine grape, which is its chief value; inferior for table use.

Campbell's Early.—The vines are hardy, vigorous growers, with good, strong, healthy foliage; very productive of large handsome clusters of most exquisite flavor; the berries are round, with a delightful bloom; color is black, the skin is thin, but firm. Valuable for table use, and one of the best shippers and keepers; buds are hardy.

Concord.—Vines are exceptionally strong robust growers; hardy, healthy and productive. Bunch large, shouldered, compact; berries large, covered with a rich bloom; skin tender, but sufficiently firm to carry well to distant markets; flesh juicy, sweet, pulpy, tender. For general cultivation the most reliable and profitable variety grown. A good variety for home purposes, and also produces a fair quality of wine.

Early Ohio.—One of the first to ripen its fruit, which makes it the most profitable early black grape we have; the vine is hardy, productive, and the fruit of the best quality; the bunches are large, compact and handsome; berries medium, and of a sprightly, pleasant flavor. A good shipper, hence valuable for market.

Eaton.—The bunches are very large, compact and shouldered. The fruit is very large, black and handsome in appearance. The vines are strong growers, buds hardy. We like the quality of this grape and recommend it for the home table.

Moore's Early.—Bunch not quite as large as Concord, but berries larger and very much like it in flavor and quality. Produces a heavy crop. Ripens very early and is nearly out of market before Concord is ripe, consequently brings a comparatively high price. Vines good, vigorous growers; buds exceptionally hardy; good for home use and grown largely for market, where it commands the highest prices; it also makes a good grade of wine.

McPike.—Bunch very large, compact, black with blue bloom; berries mammoth size, usually three inches or more in circumference, fine quality. Has now been well tested in nearly all grape-growing sections; as easily grown as Concord or Worden. Vines strong growers; buds hardy; valuable for home use and nearby market.

Wilder.—Ripens with Concord. Bunch and berry very large; vine vigorous and prolific. One of the best black varieties. Quality of the best; a good shipper; a moderate fair grower; buds hardy; desirable for home use and for wine making.

Worden.—Skin thin. It is superior to Concord. It is better in quali-

ty, larger berry, ripens from five to ten days earlier. Vines robust healthy growers; buds hardy; good for home use and market. The Worden is grown largely in the Hudson River Valley. We cannot too strongly recommend this as a valuable commercial grape.

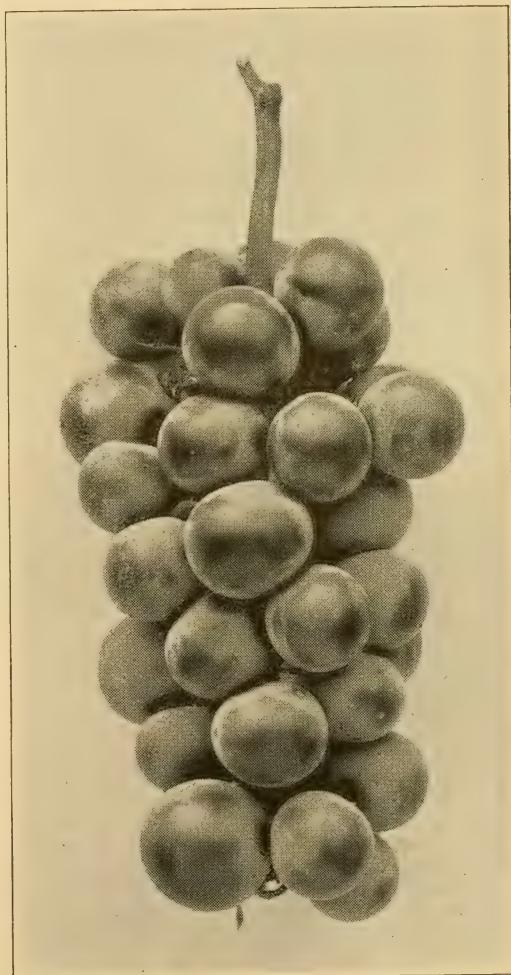
RED VARIETIES OF GRAPES.

Agawam. — (Roger's No. 15.) Berries very large, with thick skin; pulp soft, sweet and sprightly; very vigorous; ripens early. One of the best shippers and keepers and good also for the home table and for wine. It is, however, lacking in foliage, which is against it; buds are hardy

Brighton. — Bunch large, well formed; berries above medium to large, round; excellent flavor and quality, one of the earliest in ripening. Vines vigorous, healthy growers; hardy and productive; one of the best early Red Grapes; valuable for market and table use; a fair wine grape.

Catawba. — Berries large, round; when fully ripe of a dark copper color, with sweet, rich musky flavor. Requires a long season to arrive at full maturity. Vines good growers; hardy, with strong foliage; exceedingly productive and valuable where it succeeds; good for table use and makes the choicest wine.

Delaware. — Red, bunch small, compact, berries small; skin thin but firm, flesh juicy, very sweet and refreshing, of best quality; vine hardy; very productive; a moderate grower; requires rich soil and high culture



for best results; probably the best all around grape to-day, all things considered. It should have a place in every private garden and be planted largely for market purposes; one of the choicest table fruits and also makes the best wine; it is now being planted extensively by large growers.

Goethe (Rogers' No. 1.) Vines strong growers; productive, and buds hardy; bunch usually large, shouldered, compact; berries large, oval, yellowish green tinged with red on one side, amber-colored when fully ripe; skin thin but firm; flesh sweet, juicy, with high aromatic flavor. One of the best keepers and of best quality for both table and wine.

Woodruff Red.—A large, red, handsome grape, flavor sprightly and pleasant; valuable for the home table and for market; vines strong growers; buds hardy; exceedingly productive.

Wyoming Red.—The earliest good red Grape we grow; bunch small, skin bright red, fruit sweet; valuable for home use on account of its extreme earliness; vine a good grower and buds hardy.

WHITE VARIETIES OF GRAPES.

Duchess.—Exceptionally desirable for the home use on account of its delicious flavor; bunch medium to large, long, compact, shouldered; berries medium, quality best; ripens a little later than Concord; vine a good grower and productive. Keeps a long time after being gathered.

Empire State.—Bunch medium long, compact; berries medium; quality best; valuable for home use or for market; vines strong, healthy growers and exceedingly productive; a hardy variety; makes a very fair wine.

Green Mountain.—It stands at the head of the list for earliness, good bearing and vigorous, healthy growth. The berries of medium size, color greenish white; skin thin, and leaving no unpleasantness whatever in the mouth when eaten; one of the choicest flavored White Grapes; valuable for the home table and for commercial purposes, for which it is being planted extensively; vines are vigorous, productive and hardy; a reliable White Grape that should be in every collection.

Lady.—An early White Grape, hardy and productive; excellent in flavor; very desirable for home use; a high class grape and desirable for the private garden; needs high culture; a moderate grower.

Lady Washington.—A late White Grape. Bunch very large, compact, double-shouldered; berries large, yellowish green, with thin white bloom; flesh tender, sweet, juicy; vines rather frail growers, but with good foliage; ripens rather late for the Northern latitude, but succeeds well in many localities at the South and Southwest, where it is a valuable market fruit.

Moore's Diamond.—A prolific bearer, bunches large, handsome and compact, slightly shouldered; color delicate, greenish white; vines strong growers and hardy; a good market grape.

Niagara.—Bunch very large and handsome; berries large, round; skin thin, melting, sweet; ripens with Concord, and is perhaps the most generally planted White Grape for market purposes; vines are exceptionally strong, vigorous growers and immensely productive; adapted to a wide range of country, and succeeding admirably North and South; known as the White Concord.

Pocklington.—Pale green; berries very large; flesh juicy, sweet, with considerable pulp, and foxy; grown largely for market in some sections; makes a very fair quality of wine; vines are strong, productive and hardy.

ASPARAGUS.

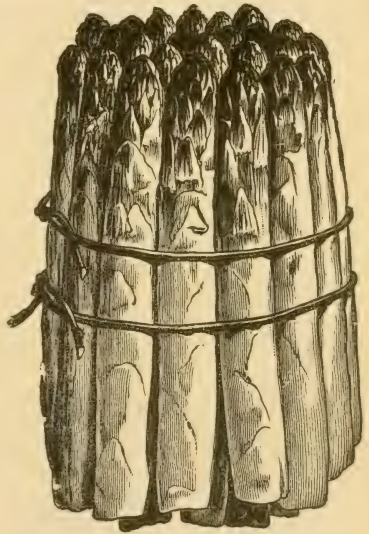
This is one of the choicest and most desirable of all the fruits and vegetables, and one of the simplest to grow. A bed once established will, with proper care, last for fifteen to twenty years without resetting.

The Asparagus is one of the best and most healthful products of the garden; one of the first of the many fruits and vegetables that we can enjoy in the early Spring. With the average season it is ready for table use—in this section about the middle of April and continues to produce edible stalks until July first. We can therefore hope to have this luscious, health imparting vegetable every day for ten weeks. We might add that we have for several years past enjoyed this excellent dish here at the writer's home for this length of time, and very often use it at two of the meals each day. If for want of land we were restricted to the growing of one vegetable, it would be the Asparagus. No garden plot can be considered a well provided one without a good portion of it is planted with this desirable vegetable.

We are often asked, "How many plants do we need for our family?" This is a hard question to answer intelligently without first knowing something about the existing conditions. In a general way, however, and with a thorough knowledge of the requirements of our own family in this respect, we feel pretty safe in advising two hundred and fifty plants for a family of five persons; five hundred plants for a family of ten. Boys and girls from seven to twelve years of age will eat as much of this vegetable as adults, and they ought to have all they want of it, too. It is good for all. The plants are inexpensive, easily cultivated, and a bed once properly established will last for many years.

The above remarks are, of course, intended more especially for the amateur gardener. We want to say, however, and without fear of just criticism, too, that when the conditions are reasonably favorable there is no single vegetable or fruit that from year to year will be a source of more profit to the commercial market gardener than an acre or two or more of the Asparagus. Here is a product of the garden always in demand. Plants comparatively cheap, requiring no special skill to plant and cultivate, an easy and pleasant crop to prepare for market and above all one that brings the first income from the garden in the early Spring.

Preparation of the Soil.—The author has grown the Asparagus successfully on a variety of soils. Most any land will do, providing it is



well drained, naturally or otherwise, and the land is loose and mellow. No one should try to grow this vegetable on hard ground or land liable to bake. The top soil should have a body of at least ten to twelve inches—if more, so much the better. The ground should have been in cultivation a year or more; under no circumstances should you plant in new plowed sod ground. Use stable manure or the other fertilizers in the same quantities as advised for Strawberries on page 50. It is also beneficial to use stable manure directly over the rows during the Winter months, as a protection to the roots, on the same principle as covering the Strawberry, except that the covering for the Asparagus need not be so heavy. It would be better to have the manure more thoroughly rotted. After your trenches have been made with the team and plow, if you are planting largely, or by the spade for the small garden bed, you should apply in the bottom of these trenches a liberal dressing of well rotted stable manure, or in its stead wood ashes or some complete fertilizer. This can be readily and easily incorporated with the soil in the bottom of the trench directly before the plants are set. The ground should be thoroughly prepared and the soil finely pulverized, freed from all stones, roots or rubbish. Perhaps in the planting of no other fruit or vegetable is it of such supreme importance and necessity that the land should be worked and brought into the best possible condition as in the establishing of the Asparagus bed, be it large or small, the great cost and labor is in the beginning and it must be well done for best results.

How the Roots Should be Planted.—Plant for garden culture, three feet apart between the rows and one foot apart in the row; for field culture set the plants four feet apart between the rows and eighteen inches apart in the rows. In either case be sure to set them, if possible, one foot below the surface of the ground. Where the virgin soil is shallow, of course, this cannot be done, but be sure always to plant as deep as possible and never work into the sub-soil more than two or three inches. Spread the roots out, covering them not more than three inches deep; every ten days or so after, or as the leader shows above the soil, fill in again, and use this method of covering until the leader is above the surface of the ground. We have in the past observed many failures of plants to grow, that have wrongfully been charged to the inferiority of the plants, that were caused by the planting in these deep trenches and filling in over the plants' level with the surface ground at the time of the planting, the plants decaying in the ground for want of air, because of this deep covering; then let it be remembered that while it is of the first importance to get the roots deep in the ground, it should be done in the manner described.

When to Plant.—The plants may be set in the Spring during the months of March, April and May, the earlier the better after the ground is fit to work to get it into proper condition. As a matter of fact May is, in early climates, too late. We must always study the condition of the plant; when too far advanced it is more or less risky to transplant it. Plant while stock is dormant and all will be well if other things are equal. The writer has had good results on several occasions and in different seasons with plantings made during the months of September and October, in the Autumn, and feels safe in recommending these as good months in which to plant the Asparagus.

Cultivation.—This is very simple and easily done. Aim to do most of the work with the horse plow and cultivator. Keep the ground mellow, loose and free of weeds. In the Autumn it is desirable to bank up the rows slightly with the soil from the middle between the rows. This can

be readily done with the mould board plow. Be sure to keep the rows under control, that the bed can be tilled at all times when the necessity requires it. If you use strong, well developed, three year old plants and set them early in the Spring or the Fall previous, you can make a few early cuttings of stalks the following Spring; the next year you can cut during the entire season. It is best to cut away and remove the top growth from the plantation each Autumn before the seed matures. A liberal application of salt each Spring, or at least every two years, is very desirable and beneficial. This salt has of itself but little available plant food, but it unlocks and sets in motion elements that exist in the soil. It sweetens the ground and is destructive to weeds, and more valuable than all else; it attracts moisture, which is very necessary for the successful growing of this luscious vegetable.

The Asparagus Worm.—This has the same general characteristics of the Currant Worm, only that it is somewhat smaller. It is a small green worm about one-half inch in length. It is, like the Currant Worm, easily eradicated. As soon as it appears use the Paris Green mixture as recommended on page 11. If necessary, make a second application in a few days after the first. For Rust use the Bordeaux mixture (without the Paris Green), or the Ammoniacal Copper Carbonate Solution, both on page 12. Use whichever one is the most convenient, but be sure to keep this rust under control, even if you have to repeat the spraying several times, as it is very injurious to the plants, and when left unchecked it weakens their vitality, causing a poor, indifferent crop the following season.

VARIETIES OF ASPARAGUS.

The writer has had considerable experience in growing the Asparagus and experimenting with the different varieties. His belief is that on the whole the success or failure of this vegetable is as "we will it." With proper or deficient care and cultivation, yet he has learned that we must have good varieties to start with, and can recommend those that follow, as good as any under cultivation. In cutting Asparagus for our own table use, the stalks need not be more than four or five inches in length, then it is all fit for use. When cut for market it must be nine to ten inches long to make the bunches convenient for handling.

Barr's Mammoth.—Another valuable acquisition to the asparagus family, a variety highly praised and well thought of wherever grown; larger and much more productive than Conover's; ripens a few days in advance of the Palmetto. Good for market or home use.

Columbian Mammoth White.—In addition to the marvelous advantage of its white color, the Columbian Mammoth White Asparagus is even more robust and vigorous in habit, and throws larger shoots and fully as many of them as the Conover's Colossal. For those who like White Asparagus this is the one to plant. Good for all purposes.

Conover's Colossal.—There is no fruit or vegetable that has had a more uniform successful career than this old, popular standard variety of Asparagus. It has stood the test of time in different localities and varied climatic conditions as favorably as anything in the plant production that has been introduced for the last twenty-five years. Even yet many large growers use this variety almost exclusively. It is a reliable, adaptable sort, early; a good producer; of quick growth and superb in quality. Valuable for the home garden and for commercial purposes.

Giant Argenteuil.—The finest and most profitable of all Asparagus. Stalks of mammoth size, bright and attractive; in quality sweet and

tender. It yields immensely and is very early; it is a French variety and has proved a great money maker wherever planted. A splendid market variety and also desirable for the home table.

Palmetto.—This is the leading variety at the present day, more of it being planted than any other single sort. It is considerably larger than the Conover's, the old reliable standard variety for so many years, is fully as early and as productive, while the flavor is unsurpassed. This stands at the head of the list. All things considered, probably more of it being in cultivation to-day than any other single sort. It seems to give general satisfaction wherever planted. I have heard nothing but words of commendation for the Palmetto from all sections and my own experience with it has been at all times favorable. The writer recommends it to all who contemplate planting either for market purposes or for the home garden.

RHUBARB—PIE PLANT.

This is a grateful vegetable and the first in the spring to remind us of the good things that are to follow. It is one of the easiest vegetables grown. It can be successfully produced in most any corner of the garden, providing the land is rich. It does best, however, in a row in the garden. Six plants are sufficient for a small family, while twelve plants will supply the largest family with an abundance right through the season. Plants once established in the ground will last for ten to fifteen years without resetting. Plant for garden culture in rows four feet apart. Any good ordinary garden soil will produce this vegetable; the richer the soil the better the results. For field culture the plants should be planted four feet apart in the row and five feet apart between the rows. The Rhubarb is grown largely for market purposes. We know many market gardeners who make a specialty of growing this vegetable and it is one of their most profitable crops. It is a specially desirable crop to grow in connection with the Asparagus, both making a good combination, as they are marketed at the same season of the year. When grown for market extensively the cost of labor for tillage is trifling, and comparatively small when compared with other perennial vegetables or fruits. While it is a generous productive plant and one that can be relied upon to bring the grower remunerative prices from year to year, rarely indeed is there a season when it will not bring profitable returns.

Cultivation.—This can nearly all be done with the use of the plow and cultivator. In fact, when these implements are used in a timely season, and as they should be, by working close to the plants, there should be very little hand work by hoeing or



RHUBARB.

otherwise, necessary. As with the Asparagus, it is beneficial to slightly ridge up the rows in the late fall, to make more perfect and rapid drainage, to promote and increase the early growth of the plants in the spring. An early southern exposure is, of course, the best situation for the Rhubarb. Perhaps in no other crop is earliness of such primary and supreme importance as in the cultivation of this vegetable. Our markets will command surprisingly high prices for the early production—prices that make it worth our while to endeavor to secure by the best cultural methods.

Fertilizers.—The ordinary stable manure is positively the best for the Rhubarb. It should be applied in the late fall, using two or three large forkfuls directly on top of each plant, and letting it remain there during the winter, to serve the double purpose of protection and food for the plants. When this cannot be had wood ashes or other good fertilizers can be used as a substitute.

When Planting.—Set the roots so that the crowns will be three inches below the grade surface of the ground. Strong two-year-old roots are the best stock to start with; you can have a good crop of stalks from these the following season. Rhubarb should be planted in the months of March and April, the earlier the better for best results. We do not advise Autumn planting of this vegetable.

VARIETIES OF RHUBARB.

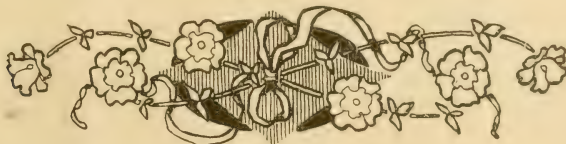
Early Scarlet.—Smaller than Myatt's, but extremely early and very highest quality. Perhaps the best extra early sort for home use.

Myatt's Linnaeus.—This is the leading market variety, and is grown extensively for that purpose. It is also desirable for the home use. It is an early, tender variety, without being in the least tough or stringy, with a mild sub-acid flavor.

Queen.—Strong, vigorous grower, producing extra large stalks of finest quality, of a decided pink color. For canning or cooking in any way its quality is unsurpassed.

St. Martins.—A new English variety, now grown largely for the London market. It is not only immensely productive, but it is also one of the earliest and, above all, it has a rich, spicy flavor, very similar to the gooseberry, when used for pies or tarts. At the present time this is being planted quite largely here and is highly appreciated by those who are acquainted with it.

Victoria.—Leaves large, skin rather thick, more acid than the Myatt's, but cultivated largely for market, where it brings good prices. The plants are fine, vigorous, compact growers.



Ornamental Trees, Plants and Vines.

IN order to successfully beautify our home grounds we should begin with the primary considerations and allow the details to come along naturally. Therefore, it is my intention to impress my readers in as few words as possible with the absolute necessity of attending to the preliminary arrangements.

It is not necessary to have any specially prepared soil for the successful culture of ornamental shade trees, shrubs, vines, providing, of course, that it is drained naturally or artificially. Botanical usage requires for each tree or plant two names, one to specify the genus, the other to indicate the species. In order that our readers may familiarize themselves with botanical nomenclature, which is very essential for the discrimination of trees, plants, and vines. I will use the botanical names, and also give the common name in parenthesis.



When to Plant.—In the Spring, during the months of March, April and May, the earlier the better, and in October, November and December, in the Fall. The most essential part of planting is the preparation of the holes. Of course, it is impossible for me to explain in this work the exact size of each hole; we must take into consideration that the many different species of trees and shrubs employed in the decoration of the lawn have a root very dissimilar. Some have very long, tap-roots, others quite flat and spreading. As a rule shrubs have a great mass of hair-like roots, so we can readily understand the necessity of having good, large holes for the reception of our trees and plants. Therefore I advise for shade trees and ornamental shrubs holes three and one-half feet in circumference and fifteen inches deep. In digging the hole it is inexpensive to place the good top soil in one side and the sub-soil on the other. In this manner we have the good soil intact. Always have the soil in the bottom of the hole loose. It is also advisable to mix a hand-

ful of wood ashes with the loose soil, which will at once begin to force our trees into growing.

How to Plant.—Do not allow the roots to remain exposed to the wind and sun. This is very detrimental. Although not necessary, it is advisable to wet the roots before planting. The soil will more readily adhere to them and assist them to take their nourishment from mother earth much sooner than if planted in a dry condition. Place the tree or shrub in the hole and carefully spread the roots. Do not allow them to come in contact with the hard edges of the hole. Take the good top soil which we have reserved and place it on the roots and work it amongst them. We are now at the most vital part of our planting, and must not neglect to use foot power to firm the soil about the roots. This thorough firming being done, we proceed to fill in the hole with the remaining soil to about six inches of the top. Put about two good forks of well-rotted manure on top of the soil, and fill in the remaining soil to the level of the ground. The object of covering the manure is to prevent the escape of nitrogen in the form of ammonia and reap the benefits of the elements of plant food contained in the manure.

Mulching.—A very good practice, and one quite frequently neglected, is mulching the tree after planting. It is very simple and inexpensive. Any loose straw, litter or grass that may be on hand may answer the purpose. By this means we keep the weeds down and hold the moisture, which is quite necessary for the sustenance of plant life.

Fall Planting should be done in October, November and December, and can be very much improved by mounding soil about the trunk of the tree to the height of about twelve inches. In this way we accomplish the double purpose of keeping the borers from entering the tree at the crown, which is the point he enters to begin his depredations, and that of keeping the tree from swaying with the winds. The distance to set ornamental shade trees must be governed by the result we desire to attain. We must consider the future when we are planning and arranging our landscape work and at all times keep it uppermost in our mind. To be successful in this line we must accomplish two purposes. Our work must be practical and pleasing to the eye, consequently we must give our work careful consideration and study the object in view. In beautifying home grounds we can by a judicious selection combine beautification and durability. For instance, if I were doing the landscape work on a country place, or in a park, I would employ for shade trees along the roads permanent trees, such as the *Acer Saccharinum* (Sugar Maple) or *Acer Platanoides* (Norway Maple), both of which are of slow growth and very beautiful. With ordinary care these varieties will live for generations. We could use many other species that would at first give results which would be pleasing to us, but would be only temporary, being short lived. The distance apart to plant shade trees along private drives or avenues is between twenty-five and thirty feet. By this means we give the roots sufficient soil from which to take their nourishment, and at the same time allow the branches to develop and spread in their natural way, without any interference. It is quite necessary in arranging trees on the lawn to plant in clumps. By this means we can acquire a more finished appearance than planting singly. In that case we must plant at a lesser distance apart. From fifteen to twenty feet is the proper distance.

Pruning Back.—At the time of planting cut back the branches of the tree or shrub fully one-half, always keeping in mind to aid you the general or natural formation of the specie. Then make smooth all muti-

lated roots. Beautiful effects can be produced by planting in clumps of three, five and eight.

Spraying.—It is a good practice and very beneficial to spray the Deciduous Trees and Shrubs in the early spring. This should be done just before the buds begin to swell, using the Bordeaux mixture with the Paris Green added as advised on page 11 of this book.

Occasionally during the Summer months plant vermin will attack the trees and shrubs. As soon as you notice them, spray thoroughly at once, using half a pound of Paris green and four pounds of slacked lime to fifty gallons of water. This spray will soon exterminate them.

The three following varieties make a very desirable small clump and harmonize nicely:

Fagus Purpurea (Purple Leaved Beech).—Makes an elegant medium-sized tree for the lawn, the foliage in the spring is a deep purple, changing to crimson, in the autumn a dull purplish green.

Acer Wierii Laciniatum (Wiers Cut-Leaf Maple).—One of the handsomest trees we have to-day; rapid growth; beautiful dissected foliage



PLANTING ABOUT THE COUNTRY HOME.

and drooping form. Makes a very ornamental tree, and is being planted largely as an avenue tree.

Liriodendron Tulipifera (Tulip Tree).—A magnificent native tree, with broad, glossy fiddle-shaped leaves of a light green color and beautiful tulip-like flowers, allied to the Magnolias.

The five species hereafter named make a very beautiful clump, containing varied characteristics in form of growth and foliage.

Catalpa, Hybrida Japonica (Teas, Japan Catalpa).—Exceedingly rapid grower, with spreading, irregular form, and its large heart-shaped leaves, and clusters of white and purplish flowers in midsummer and its long seed pods in autumn make it an attractive ornamental tree for the

lawn. The flowers are delightfully fragrant, and remain on the trees twelve to fifteen days.

Acer, Saccharinum (Sugar Maple).—A well known native tree of elegant pyramidal form; valuable for the production of sugar and for its wood. Its fine form and foliage make it desirable as an ornamental and shade tree; the great American tree, and too well and favorably known to need any extended description.

Betula Papyracea (Paper or Canoe Birch).—Native of America; forms a large tree; bark brilliant white, leaves large and handsome.

Populus Bolleana (Bolleana Poplar).—Resembles Lombardy in growth, foliage dark green above and silvery green beneath; one of the best silver-leaved trees. A clean, beautiful tree in every particular.

Acer Shwedlerii (Schwedlers Maple).—A beautiful tree with the young shoots and leaves of a bright purple or crimson color; changes to purplish green in the older leaves; one of the handsomest trees we have for lawn planting.

For a large group of eight use these named and described below:

Fagus, Cuprea (Copper Beech).—A rapid growing tree, foliage copper color; much used for avenues and lawns.

Pyrus, Aucuparia (European Mountain Ash).—A fine, hardy tree, of medium size, erect stem and pinnate foliage covered from July until winter with large clusters of bright scarlet berries; very ornamental for the lawn.

Koelreuteria, Paniculata (Varnish Tree).—The Koelreuteria is not as well known as it should be, as it fills a place in general landscape work occupied by few other trees. Leaves are pinnate dark green and are so glossy that they appear to be varnished. Producing large panicles of showy yellow flowers in July.

Liquidambar Styraciflua (Sweet Gum or Bilsted).—One of the finest American trees. Of medium size and moderate growth; form round-headed or tapering; leaves resemble somewhat those of the maple, but are star-shaped and of a beautiful glossy green color in summer, turning to a deep purplish crimson in autumn; bark corky. Beautiful in all stages of growth, it is particularly handsome and striking in autumn.

Magnolia Macrophylla (Great Leaved Magnolia).—This we consider one of the greatest lawn ornaments, and should be planted on every well arranged lawn. The leaves are two feet in length and white beneath. Flowers, when full blown, 8 to 10 inches in diameter; appearing in June. Very rare.

Acer, Platanoides (Norway Maple).—A distinct foreign variety, with large, broad leaves of a deep, rich green. One of the finest and most desirable trees grown.

Acer, Pseuda Platanus (Sycamore Maple).—A beautiful tree with the right growth, with large foliage and ash gray colored bark. Winters back in cold situations.

Aesculus, Rubicunda (Red Flowering Chestnut).—Not so rapid a grower as the white; foliage of dark green, blooms later. A very showy tree. No lawn is complete without this very handsome tree.

There are many more Ornamental Trees that can be used in grouping, but from our own experience and observation we consider those varieties which we have named and described above, the most valuable for this purpose.

Gymnocladus, Canadensis (Kentucky Coffee Tree).—A beautiful tree,

with pinnate leaves, foliage a delicate bluish green; flowers in June, followed by very long seed pods; very desirable for lawn planting; thrives well on any soil.

Morus Downing (Downing Mulberry).—Everbearing; a fine ornamental tree; bears fine black fruit.

Quercus Alba (American White Oak).—One of the finest American trees, of large size and spreading branches; leaves lobed, pale green above and glaucous beneath.

Cercis, Canadensis (American Judas Tree).—A very ornamental tree, with perfect heart-shaped leaves, covered with a profusion of delicate reddish purple flowers. Before the foliage appears, grown as single specimens, they are very attractive.

Salisburia, Adiantifolia (Maiden Hair Tree).—A tree from Japan combining in its characteristics the Conifer and Deciduous tree. The tree is of medium size, beautiful, fern-like foliage, resembling a maiden hair fern. Rare and elegant.

Chionanthus, Virginica (White Fringe).—A small native tree, with large, glossy leaves and drooping racemes of pure white flowers, having fringe-like petals; blooms in May.

Salix, Laurefolia (Laurel Leaf Willow).—A medium-sized tree of great merit, of rounded form, foliage deep green, resembling very much the handsome Broad Leaf Laurel.

Quercus Palustris (Pin Oak).—This is considered the most beautiful of all the Oaks. As the tree grows the branches droop until the lower ones touch the ground, giving it a peculiarly beautiful ovate outline. The leaves are deep green, glossy and finely divided, flaming to orange and scarlet in the fall.

Rhus Cotinus (Purple Fringe).—A very curious tree, with masses of purplish flowers. When covered with dew, it resembles a cloud of smoke. It is sometimes called smoke tree.

Liquidambar Styraciflua (Sweet Gum or Bilsted).—One of the finest American trees. Of medium size and moderate growth, form round-headed or tapering; leaves resemble somewhat those of the maple, but are star-shaped and of a beautiful glossy green color in summer, turning to a deep purplish crimson in autumn; bark corky. Beautiful in all stages of growth, it is particularly handsome and striking in autumn.

Acer Shwedlerri (Schwedlers Maple).—A beautiful tree with the young shoots and leaves of a bright purple or crimson color; changes to purplish green in the older leaves; one of the handsomest trees we have for lawn planting.

Populus, Boleana (Boleana Poplar).—Resembles Lombardy in its growth; foliage dark green above and silvery green beneath; one of the best silver-leaved trees.

Acer, Dasycarpum (Silver Maple).—A handsome shade tree of rapid growth, with small foliage of glossy green above and silvery appearance beneath. Tree very hardy and easily transplanted where immediate shade is required. One of the most useful trees, also a favorite street and park tree.

Acer Wierii Laciniatum (Wiers Cut-Leaf Maple).—One of the handsomest trees we have to-day; rapid growth, beautiful dissected foliage and drooping form. Makes a very ornamental tree.

Aesculus, Rubicunda (Red Flowering Chestnut).—Not so rapid a

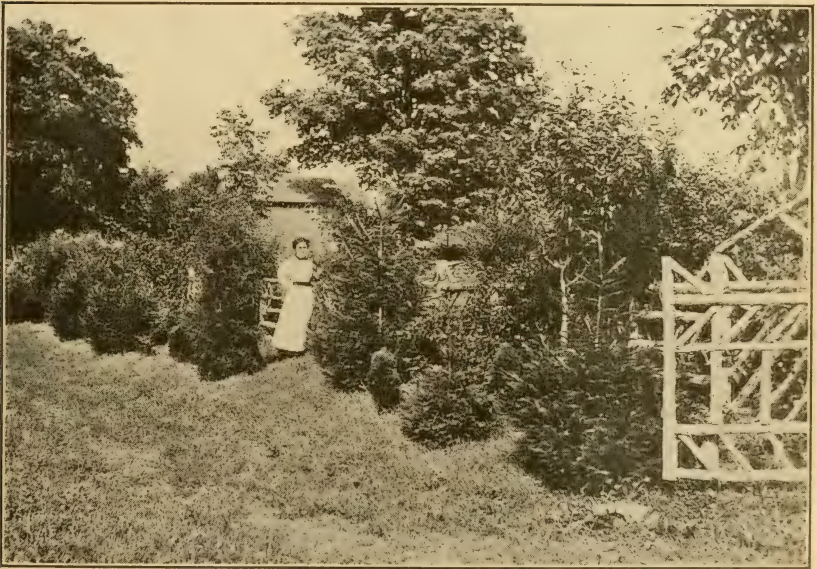
grower as the white; foliage of dark green, blooms later. A very showy tree. No lawn is complete without this very handsome tree.

Fagus, Cupera (Copper Beech).—A rapid growing tree, foliage copper color; much used for avenues and lawns.

Pyrus, Aucuparia (European Mountain Ash).—A fine, hardy tree, of medium size, erect stem and pinnate foliage, covered from July until winter with large clusters of bright scarlet berries; very ornamental for the lawn.

Fraxinus, Quercifolia (Oak Leaved Ash).—A tree with pyramidal head and dark lobed leaves, downy underneath, producing scarlet berries; very hardy and desirable for planting in lawns.

Catalpa, Hybrida Japonica (Teas, Japan Catalpa).—Exceedingly rapid grower with spreading, irregular form and its large heart-shaped



A DESIRABLE COMBINATION AT ALL SEASONS.

leaves, and clusters of white and purplish flowers in midsummer and its long seed pods in autumn make it an attractive ornamental tree for the lawn.

Tilia, Americana (American Linden).—A native tree, with large leaves and a profusion of yellow flowers, in early summer; desirable for lawn or avenue.

Tilia, Europeau (European Linden).—A variety of neat and compact habit; leaves are much larger than our native sorts.

Liriodendron Tulipifera (Tulip Tree).—A magnificent native tree,

with broad glossy fiddle-shaped leaves of a light green color and beautiful tulip-like flowers, allied to the Magnolias.

Acer Lutescens.—A variety of the silver-leaved maple, of vigorous growth, with bright yellow leaves. Its rich bronze shoots in spring, and tender yellow-green foliage in summer, will render it a valuable tree for the landscape.

Ulmus Campestris (English Elm).—An erect, lofty tree, of rapid, compact growth, with smaller and more regularly cut leaves than those of the American, and darker colored bark. The branches project from the trunk almost at right angles, giving the tree a noble appearance.

Ulmus Belgica.—A fine variety of English Elm, large size, rapid growth, and fine spreading shape.

Acer, Reitenbachi (Reitenbach's Norway Maple).—An excellent and striking variety with dark purple leaves, which retain their color throughout the season.

Acer, Platanoides Dissectum (Cut-Leaved Norway Maple).—Compact growing tree, with dense, dark green foliage, which is regularly and deeply cut, so as almost to divide the leaf into three parts. One of the best of the cut-leaved varieties; rare.

Cornus Florida (White Flowering Dogwood).—An American species, of spreading irregular form, growing from 16 to 25 feet high. The flowers produced in spring before the leaves appear are from 3 to 3½ inches in diameter, white and very showy. They begin to appear just as the Magnolia flowers are fading, and are invaluable for maintaining a succession of bloom in the garden border or on the lawn.

Virgilia Lutea (Yellow Wood).—One of the finest American trees. Of moderate growth, broadly rounded head, foliage compound like that of the Robinia, and of a light green color, turning to a warm yellow in Autumn; flowers pea-shaped, white, sweet-scented, appearing in June in great profusion, in long drooping racemes covering the tree.

Cytisus (Laburnum or Golden Chain).—A native of Europe, with smooth and shining foliage. The name Golden Chain alludes to the length of the drooping racemes of yellow flowers, which appear in June.

THE BEST ORNAMENTAL FLOWERING TREES.

Although there are many other flowering trees in cultivation, I have from personal observation selected the following as the most desirable from many points of view, requiring no special treatment, all being perfectly hardy and can be planted with safety in the most exposed situations, and can be adapted to large or small lawns with equally good results. It is not my intention to go into any lengthy detail in describing the different trees, but confine myself to simplicity and designate the maximum height, period of bloom, color of flower and peculiarity of foliage and growth:

Catalpa Bungei (Chinese Catalpa).—A Chinese species, forming a perfect umbrella-shaped head, with thickly overlapped, large glossy green foliage, producing white flowers, margined with purple in July. Attains a height of ten feet.

Catalpa Speciosa (Western Catalpa, Indian Bean).—An extraordinarily hardy tree; blooms in the early part of July; color of flower pure white, slightly tinged with a delicate shade of purple; leaves heart-

shaped and very large. Its rapid growth makes it valuable for lawn planting, making a tree forty feet high in a short time.

Aesculus Rubicunda (Red Flowering Horse Chestnut).—Rounded form, dark green foliage; flowers very showy red, which remain in bloom from middle of May to first of June; very hardy and quite free from insects; very desirable for lawn or street planting, requiring no pruning. They will make beautiful specimens forty feet in height.

Aesculus Alba flore pleno (Double White Flowered Horsechestnut).—Habit of growth pyramidal, bearing large panicles of double white flowers latter part of May; an admirable effect can be produced by grouping it with the Rubicunda, or as a lawn specimen it has no superior. I have seen this variety fifty feet in height, which was a sight to behold when in full bloom.

Magnolia Macrophylla (Great Leaved Magnolia).—One of the most magnificent trees in cultivation, possessing many features; foliage yellowish green, white beneath and two feet in length; flowers white and very fragrant, measuring ten inches in diameter and appearing in June. Tree medium size, rarely ever attaining a greater height than thirty feet. To insure growth the Magnolia should be planted in the Spring.

Magnolia Tripetela (Umbrella Tree).—A medium sized tree with immense leaves and large white flowers, succeeded with crimson fruit-cones, which give it a handsome appearance. Owing to its dense head it is valuable as a shade tree; maximum height forty feet.

Magnolia Accuminati (Cucumber Magnolia).—A tree of unusual growth, attaining a height of sixty to ninety feet; leaves very attractive, nine inches long, with a peculiar shade of bluish green, flowers yellow tinted with purple and harmonizing nicely with the foliage; fruit when green resembles a cucumber. All things considered we think this variety as valuable as any of the species of the Magnolia family indigenous to America.

Magnolia Conspicua (Chinese White Magnolia).—A medium sized tree of great beauty, valuable for planting on small lawns where space is limited; profuse bloomer; flowers very large and pure white; foliage of normal size. An additional feature of Magnolia Conspicua is its blooming before the leaves appear. It requires years for it to reach its greatest height—fifteen feet.

Magnolia Speciosa (Showy Flowered Magnolia).—Stubby while young, but becoming a fair sized tree with age; flowers white and purple, cup-shaped; foliage large glossy and massive; blooms a week later than any other Chinese variety and retains its flowers in perfect condition a great length of time.

Magnolia Lennei (Lenne's Magnolia). A superb variety and like the other varieties of the Chinese family it is a dwarf. Foliage very large and conspicuous; flowers deep purple and fragrant, which are borne when the tree is very young. These qualities combined with its hardiness render it very valuable.

Prunus Padus (European Bird Cherry).—A rapid growing tree of great beauty; foliage glossy, flowers white and fragrant; especially adapted to small lawns; height thirty feet.

Prunus Padus Flora Pleno (Double Flowered Bird Cherry).—A rapid pyramidal grower, producing double flowers; valuable as a specimen tree; height when fully grown, forty feet.

Cercis Canadensis (American Judas Tree).—A very desirable tree

for the lawn; perfect heart-shaped leaves. Before the foliage appears the tree is covered with reddish purple flowers; height from twenty to thirty feet.

Cercis Japonica (Japanese Judas Tree).—Avaluable addition to the list of medium sized trees; foliage deep green and smaller than the American species; flowers large and of a rich purple color; on account of its dwarf habit of growth it can be used to good advantage for grouping; rarely ever grows more than fifteen feet tall.

Cornus Florida (White Flowering Dogwood).—A tree of spreading irregular form; the flowers, which are produced in Spring before the leaves appear, are white and very showy and remain in perfect condition a long time; height, sixteen to twenty-five feet.

Cornus Flore Rubro (Red Flowering Dogwood).—A variety producing bright red flowers when quite young. Height, twenty to thirty feet.

Crataegus Flore Pleno (Double White Thorn).—Deserves a place on every lawn; dense grower requiring very little space; foliage very attrac-



THE AUTHOR AND WIFE IN 1899.

tive; flowers are white and double; season of bloom latter part of May to June; fifteen feet in height.

Crataegus Coccinea Flore Pleno (Scarlet Thorn).—Flowers very double, having a beautiful scarlet shade; will thrive well in any soil; height from twelve to fifteen feet.

Gymnocladus Canadensis (Kentucky Coffee Tree).—A fine native tree with rough bark and stiff, blunt shoots; foliage feathery, with a delicate bluish green color; very conspicuous as a lawn ornament; blooms in June. Height varies from thirty to forty feet.

Koelreuteria Paniculata (Varnish Tree).—A native of China; round

headed and extremely hardy; foliage fine lobed; covered with a profusion of golden yellow flowers in July when most other trees are done blooming. Maximum height forty feet.

Liriodendron Tulipifera (Tulip Tree or White Wood).—A magnificent tree with bright green shining leaves; flowers large yellow, blotched with orange and green. This stately tree is one of our best native sorts; valuable for street planting; attains a height of fifty feet.

Persica Vulgaris Flora Alba Pleno (Double White Flowering Peach). A small tree of remarkable beauty when enveloped with its double white flowers in Spring before other trees have begun to blossom.

Persica Vulgaris Flora Rosea Pleno (Red Flowering Peach).—A sight worth looking at in Spring, every branchlet being covered with rose like flowers; valuable as a single specimen or for grouping with flowering shrubs.

Ptelea Trifoliata (Hop Tree).—A small tree of great beauty at all seasons of the year, having a peculiarly mottled bark and producing beautiful white flowers in June; a very interesting object in Autumn when it displays its hop-like seed pods; fifteen feet greatest height.

Pyrus Malus Angustifolia (Bechtels Flowering Crab).—I cannot say too much in praise of this beautiful little tree; completely covered in early Spring with a double rose-like mass of bloom; fifteen feet in height.

Pyrus Malus Parkmanni (Parkman's Double Flowering Crab).—A Japanese species of dwarf habit of growth; flowers are borne in clusters of a dark rose color; ten feet greatest height.

Rhus Cotinus (Smoke Tree).—A small tree of fifteen feet in height, spreading to considerable extent and requiring more space than the ordinary medium size tree. It is a grand sight when in bloom in mid-summer; its flowers are fringe or hair-like and resemble a cloud of smoke.

Virgilia Lutea (Yellow Wood).—One of the finest American trees of moderate growth; foliage, light green color, turning to a beautiful yellow in Autumn; very attractive in June when covered with racemes of white pea-shaped flowers.

Amygdalus Communis Flore Rosea Pleno (Double Flowering Almond).—A vigorous, hardy tree, covered in May with double rose colored blossoms resembling small roses; rarely ever grows taller than twelve feet; valuable for planting in borders with flowering shrubs.

Chionanthus Virginica (White Fringe).—A superb lawn ornament of rounded form and dwarf habit of growth; foliage large and glossy—this feature alone should insure for it a prominent place on every lawn, but to add to its beauty in May and June it is covered with racemes of pure white flowers. I have seen specimens of this tree ten years old twenty five feet tall.

Prunus Pissardi (Purple Leaved Plum).—A small tree of great value in the beautification of the home grounds; not like other purple leaved trees which are at their greatest beauty when the foliage first appears, the *Prunus Pissardi* improves its coloring effect as the season advances and is at its best in the late Autumn. It bears a profusion of small white flowers in Spring. It can be used advantageously as a specimen tree, for grouping with other trees and shrubs, or can be used with marvelous effect for hedging purposes; can be kept at any desired height; if allowed to grow it will reach its normal height, fifteen feet, in five years.

Cytisus (Laburnum or Golden Chain).—A native of Europe, having a dark green bark; attractive as a lawn tree; foliage smooth and

glossy. The name Golden Chain alludes to the drooping racemes of yellow flowers which cover the tree in June; makes a growth of thirty feet.

WEEPING DECIDUOUS TREES.

The following are the most valuable and ornamental of the Weeping Trees and should have a place on every lawn. They are almost indispensable to the landscape gardener, possessing a character of their own. they can be used for many purposes.

Morus Tartarica Pendula (Weeping Russian Mulberry).

Populus, Grandidentata Pendula (Weeping Tooth Leaved Pop lar).

Betula Alba (European White Weeping Birch).—A graceful tree, with silvery bark and slender branches. Quite erect when young, but after four or five years' growth assumes an elegant drooping habit, rendering the tree very effective in landscapes.

Fagus Pendula (Weeping Beech).—Originated in Belgium. A remarkably vigorous, picturesque tree of large size. Its mode of growth is extremely curious. The trunk or stem is generally straight, with the branches tortuous and spreading; quite ungainly in appearance when divested of their leaves, but when covered with rich luxuriant foliage, of wonderful grace and beauty.

Fraxinus, Pendula (Weeping Ash).

Betula, Pendula Laciniata (Weeping Cut Leaf Birch).

Salix, Caprea Pendula (Weeping Kilmarnock Willow).

Salix Wisconsin Pendula (Weeping Wisconsin Willow).

Tilia, alba Pendula (Weeping Linden).

Ulmus, Camperdown Pendula (Weeping Camperdown Elm).

JAPAN MAPLES.

The Japan Maples are so distinct in size, foliage and growth from the other maples and ornamental trees that we place them in a group by themselves. They are an exceedingly beautiful and interesting class of trees, their dwarf habit, varied and handsome foliage fit them for a place even on the smallest lawn. These can be supplied in quite an extended list and great variety of form. They comprise varieties with bright and dark red, yellow and green, and variegated leaves; finely cut, lobed and serrated foliage, dwarf growers requiring but little room. For beauty of coloring they are unsurpassed; for effective grouping and display they are unrivalled. There are a large number of other Japan Maples but in this climate we have found only those named below to be reliable and worthy of the expense incurred in purchasing them.

How to Plant.—These trees should be planted in the same way as recommended for the other shade trees and shrubs. They are semi-dwarf trees and when planted in groups should be set twelve to fifteen feet apart.

Acer, Polymorphum (Japan Maple).—The normal form of type, foliage small, five lobed and of a bright cheerful green in Spring and Summer, changing to a dark crimson in Autumn.



FOLIAGE OF THE JAPAN MAPLE.

Very dwarf and compact, and one of the hardiest and best. Foliage broad and a large part of Summer a vivid golden yellow.

Acer Rosio Pictis (Cut Leaved Variegated Japan Maple).—Dwarf; most delicately formed of all; foliage deeply and finely cut like lace.

FOR STREET PLANTING.

We must consider the location in which we are going to plant. There are many shade trees that will thrive and do well on the home grounds, but when employed for street planting are complete failures. Great care should be exercised in this respect with planting in cities where we have such a great amount of gas as there are a great many species which are unable to resist its poisonous effects. I have very often observed, especially in New York City, the great quantity of beautiful trees that have been destroyed of their beauty by these gaseous effects. I have particularly noticed that the family of Poplars make the most desirable trees for street planting in cities, where it is quite natural that trees must undergo considerable abuse and neglect. The elms are a beautiful family of trees and make fine, lofty shade trees for street or avenue planting, but are susceptible to that very destructive creature, *Galeruca Luteola* (Elm Leaf Beetle), which will in a short time defoliate the tree, and if not kept under control it will eventually kill it. Consequently we can readily understand the great risk in using this grand old tree for street planting. The Maples are very desirable for this purpose, being free from the attacks of insects which is a valuable commendation in their favor. Owing to their beautiful Autumnal tints they make a very beautiful showing as a street or avenue ornament.

Acer, Atropurpureum (Purple Leaved Japan Maple).—Foliage dark purple and finely cut. The hardiest of the Japan maples.

Acer, Sanguineum (Blood Leaved Japan Maple). — Of dwarf habit, foliage, serrated; blood red in June. One of the best of the family of Japan Maples.

Acer, Ampelopsilobum (Seven-Lobed Japan Maple).—A handsome tree with green foliage and seven-lobed.

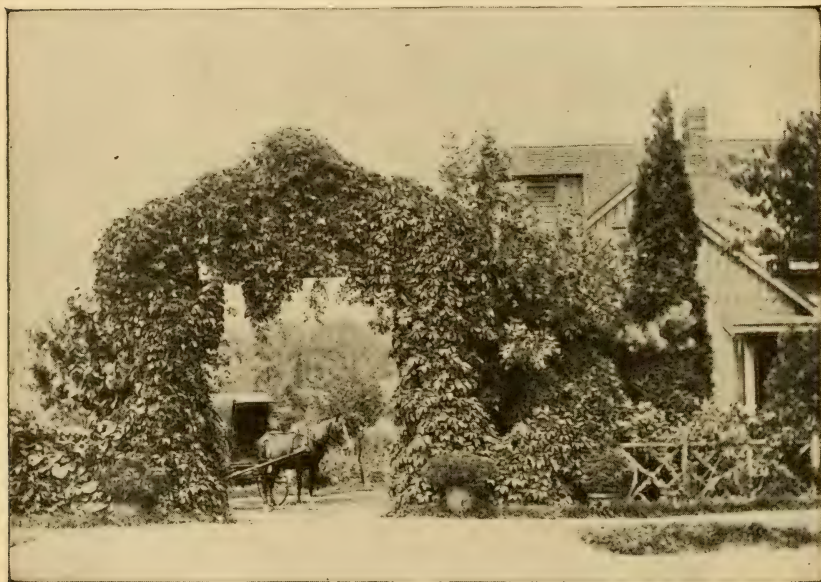
Acer, Atropurpureum dissectum (Cut Leaf Japan Maple).—One of the most striking of the Japanese varieties; dwarf and weeping. The leaves are rose color when young, changing to deep purple as they become older. They are delicately cut, giving them a fern like appearance.

Acer, Palmatum.—A strong growing variety with broad, light-green foliage.

Acer, Palmatum aureum.—

HARDY ORNAMENTAL FLOWERING SHRUBS.

We are all fully aware of the necessity of flowering shrubs in the beautification of the rural home grounds and the great quantities of species of this family we have to select from. Having made a careful study of this



branch of horticultural work I feel confident that the varieties which I intend to describe and recommend will give entire satisfaction to my readers, no matter in what section of country you may intend to plant. I have been very cautious to select only those varieties that are perfectly hardy and will give good effects whether planted singly or in groups. Let me importune my friends to be more generous in the use of shrubs on the home grounds; they require very little care except an occasional shortening of the branches to infuse new life in the remaining buds, and removing old and decayed wood. When once planted we can have an abundance of bloom annually from Spring until Autumn, providing we make selections that will give us a continuity of flowers. Not so with Herbaceous or bedding plants, which we must continue to plant annually. We will not attempt to group the various sorts but leave this to the judgment of the planter, he being in a better position to determine the desired results.

How to Plant.—Dig the holes and plant in the same way as before recommended for the ornamental trees. The Hardy Flowering Shrubs can be planted during the months of March, April and May, in the Spring. Our aim should be, however, to plant them as early as possible, whilst the

stock is in dormant condition. You can also plant in the Fall to good advantage during the months of October, November and December. Mulch the ground about the plants with a good, liberal application of stable manure, letting it remain on the ground during the Winter months, and incorporating it in the soil in the early Spring.

Spirea, Vanhouttii.—One of the most charming and beautiful of the Spireas. Habit graceful and drooping. Completely covered with panicles of pure white flowers. A handsome sight when in full bloom. We cannot say too much in praise of this grand shrub which profusely bears beautiful flowers annually under neglect.



SPIREA VANHOUTTII.

Spirea Opulifolia Aurea (Golden Leaved).—An interesting variety of distinctly yellow foliage; flowers white. One of the most effective shrubs on the lawn.

Spirea Reveesi.—Covered in Spring with clusters of pure white flowers.

Spirea Billardi.—Rose color, blooms nearly all Summer.

Spirea Prunifolia (Bridal Wreath).—One of the earliest blooming kinds. Flowers double white.

Spirea Bumalda.—A Japanese species of dwarf habit and covered in mid-summer and Autumn with bright, rose colored flowers.

Spirea Thunbergii.—One of the most charming of all low growing shrubs. Foliage of fine, feathery appearance, taking beautiful tints in Autumn. One of the earliest and freest bloomers.

Spirea Callosa Alba (Fortune's Dwarf White Spirea).—A white flowering variety of dwarf, bushy habit; keeps in flower all Summer; a valuable small shrub.

Caryopteris Mastacanthus (Blue Spirea).—A neat, compact, new sort, with large fragrant blue flower-cluster that keep crowding up plentifully from the axils of the leaves, from mid-summer until frost. If killed to the ground by frosts the young shoots spring up freely and flower the first season.

Spirea Anthony Waterer.—A fine new dwarf spirea, with large, crimson flower corymbs, produced quite abundantly. One of our finest shrubs.

Spirea Callosa. (Fortune's Pink Spirea).—Bears pink flowers in large, flat clusters nearly all Summer.



JAPAN SNOW BALL,

Viburnum Plicatum. (Japan Snow Ball).—A beautiful flowering shrub; the flower clusters, which are produced all over the bush, are spherical in form and of the purest white, with beautiful crimped, dark green foliage. There are many other varieties of Snow Ball, but all are susceptible to the attacks of plant vermin, which curl and twist their wood into abnormal shapes, making them undesirable for planting. (*Viburnum Plicatum*) is free from the ravages of this insect and we recommend it with confidence.

Forsythia, Suspensa (Weeping Golden Bell).—An almost evergreen shrub of sprawling habit, covered in Spring before the leaves appear with handsome yellow flowers. Very conspicuous.

Forsythia Viridissima.—Grows upright, has deep green bark and leaves and deep yellow flowers. It is one of the very finest of all early blooming flowering shrubs.

Corylus Atropurpurea (Purple Leaved Filbert).—A very conspicuous shrub, with large, dark purple leaves; very distinct.

Eleagnus Longipes (Japan Oleaster).—Beautiful silvery foliage, laden with fruit; the bush is highly ornamental and the fact that the leaves remain fresh till late Autumn gives it additional value.

Halesia Tetraptera (Silver Bell).—A beautiful large shrub, with pretty white bell-shaped flowers in May; it is distinguished by its four winged fruit which is from one to two inches long.

Exochorda Grandiflora (Pearl Bush).—A fine shrub, producing large, white flowers in May; one of the finest shrubs of its season.

Deutzia Crenata.—The beautiful white single-flowered species that blooms so lavishly in early June. Preferred by many to the double sorts, valuable for backgrounds, specimens or grouping.

Deutzia Candidissima.—A new and handsome species, with very large double flowers so pure white and perfect that they are frequently used in "floral pieces."

Deutzia Hybrida Lemoinei.—A new and elegant cross from *D. grac-*

ilis, as dwarf and free-flowering, but of more upright growth and said to be even finer for forcing.

Deutzia (Pride of Rochester).—A choice new sort that excels in vigor, in size of flowers, length of panicles and freedom of bloom. The flowers are double, white, tinged outside with pink, and open a week earlier than those of other sorts.

Deutzia Scabra (Roughed-Leaved Deutzia).—Very vigorous; flowers white, single, bell-shaped, in small bunches. One of the tallest-growing sorts.

Deutzia Gracilis (Dwarf Deutzia).—The beauty of the family and one of the best shrubs in our entire list. It forms a low, round bush, covered with small white flowers; valuable for forcing.

Weigela Candida.—A new, valuable sort that bears large white flowers profusely in June and continues blooming sparingly until Fall.

Weigela Van Houttii.—Deep crimson flowers, covering the plant completely.

Weigela Nana Variegata (Dwarf Variegated Weigela).—Dwarf, with clearly defined, variegation of green, yellow and pink in its leaves; flowers delicate rose and pink. Effective and useful. One of the most beautiful variegated shrubs in cultivation.

Weigela Rosea.—Bears beautiful rose-colored flowers thickly in June.

Weigela Stelzneri.—Dark red flowers born thickly along the branches.

Hydrangea.—There are several varieties of Hydrangea, but we consider the Hydrangea Paniculata Grandiflora the most reliable for out-door culture; it is perfectly hardy and can be grown successfully in the coldest locations; it bears a profusion of white flowers which change to pink in Autumn; it can be used advantageously for many purposes as single specimens or for grouping; it is also a very desirable hedge plant. We think one of the most enjoyable sights we viewed the past season was a large hedge of Hydrangea P. G. It requires severe pruning in Spring, it can be cut back to the ground if necessary and will bear a profusion of flowers the same season. The Hydrangea makes a fine showing planted in beds in lots of six and upwards; set the plants four feet apart.

Prunus, Japonica Flore albo pleno (Double White Almond).—Produces beautiful double white flowers in May.

Prunus, Japonica Rubro pleno (Double Pink Almond).—A beautiful small shrub, bearing in the Spring before the leaves appear, an abundance of small, double, rose-like flowers, closely set on twig.

Lonicera (Marowi).—A vigorous, broad spreading bush, bearing numerous yellow flowers, followed by crimson fruit, which remains on the plant for a long time, giving it a very choice effect.

Lonicera (Fragrantissima).—Blooms very early in the Spring, sometimes before the snow disappears. Very valuable for early bloom.

Berberis Thunbergi (Thunberg's Barberry).—A dwarf spreading species, with small white flowers in May, followed with an abundance of deep scarlet berries, which color they maintain all Winter. The foliage in the Summer is of a beautiful shade of green, changing to a beautiful reddish yellow in Autumn.

Berberis, Purpurea (Purple Leaved Barberry).—A very desirable plant for the lawn. Foliage of violet purple color, very effective when contrasted with the lighter foliage of other plants.

Philadelphus, Coronarus (Mock Orange).—Strong growing, rounded habit, rich green foliage. Flowers pure white and very fragrant.

Philadelphus Foliis Aureis (Golden Mock Orange).—A brilliant little shrub, with bright golden leaves, color constant through Summer. Grouped with green, and purple leaved shrubs; it produces fine effects.

Philadelphus Grandiflora (Large Flowering Syringa). A large shrub, with recurved branches laden with large, showy flowers, slightly fragrant.

Tamarix Africana.—Handsome foliage, upright habit; flowers in May.

Tamarix Chinensis.—A vigorous, upright grower, with delicate foliage of a lively green color; flowers rose colored in September.

Kalmia Latifolia (American or Mountain Laurel). A beautiful native evergreen shrub, with shining foliage and dense clusters of pink flowers in Spring; requires same treatment as the Rhododendron.

Kalmia Angustifolia.—Has narrower leaves and darker pink flowers.

Cornus, Mascula Variegata (Variegated Cornelian Cherry).—The variegation of this variety is of pure white.

Rhodotypus, Kerrioides (White Kerria).—A very ornamental shrub from Japan, with handsome foliage and large, white flowers. Last of May. Succeeded by numerous small black fruit. One of the hardiest shrubs in cultivation. We consider the foliage of this plant the equal in beauty of any of the green leaved shrubs.

Myrica Cerifera (Bayberry).—A low spreading shrub, handsome foliage; small, white berries in Autumn.

Hamamelis Japonica (Japan Witch Hazel).—A most beautiful shrub, with darker leaves and more elegant habit than the American type. It makes a choice specimen of low, close growth, and is always attractive. The yellow flowers appear in curious shape just before Winter sets in.

Cydonia Pyrus Japonica (Japan Quince).—The Japan Quince ranks among our choicest shrubs. As single shrubs on the lawn they are very attractive. Their large, brilliant blossoms are among the first in Spring, and they appear in great profusion, covering every branch and twig. The foliage is of a bright green and has a leathery appearance.

Cornus Sanguinea (Red Barked Dogwood).—A strong growing shrub, with clusters of fine white flowers; its blood red bark enlivens either Summer or Winter landscape. Can be used to good effect in grouping.

Sambucus, Aurea (Golden Elder).—Very desirable for contrasting. Foliage of a beautiful golden yellow.

Ilex Crenata (Japanese Holly).—Hardy Japanese variety with shining myrtle-like leaves. The Hollies are very valuable for landscape work, being an evergreen they enliven the dreary appearance of home grounds during the Winter months.

Ilex Opaca (American Holly).—A beautiful evergreen, bearing red berries in great abundance; contrasting finely with the green leaves.

Ilex Aquifolia (English Holly).—Very similar to the American Holly. The leaves not quite so large and growth more compact.

Mahonia Aquifolia (Holly Leaved Mahonia).—A native species of medium size, with purplish, shining, prickly leaves and showy, bright yellow flowers in May, succeeded by bluish berries; its handsome deep green glossy foliage and neat habit render it very popular for decorative planting.



CLETHRA ALNIFOLIA (Sweet Pepper.)

Clethra, Alnifolia (Sweet Pepper Bush). — A small shrub of dark green foliage, having a profusion of white flowers in mid-summer, followed by clusters of deep red berries. Very fragrant.

Prunus, Pissardi (Purple Plum). — The finest purple leaved tree or shrub. The foliage when young is crimson, turning to deep purple in Autumn which color it retains until the leaves fall in the Winter. Very desirable for contrasting with other trees and shrubs. Flowers, single, white, cov-

ering the tree. Transplants easily and is worthy of a place on every lawn.

Mahonia Japonica.—Large distinct leaves and yellow flowers in May. This is one of the prettiest evergreen shrubs that can be planted; attracts attention where ever grown.

THE EUONYMUS.

The **Euonymus** are indispensable in the decoration of the lawn on account of their varied colored flowers and fruit, also the peculiar form and growth of bark which is characteristic of each variety. They are perfectly hardy and can be grown on any soil and under any condition of exposure.

Euonymus Atropurpureus.—A tall growing shrub with larger leaves than the European, turning to scarlet in Autumn; fruit large, dark red.

Euonymus Alnifolia.—With broad, glossy green leaves, which turn to a purplish red in Autumn; fruit blood red.

Euonymus Europeus.—Fruit rose colored, which is borne in great quantities and remain on the tree a long time.

HEDGING PLANTS.

How to Plant.—Trenches should be made for these deep enough to suit the requirements of the roots of the stock used. For a single hedge

row of the California Privet the trench should be two and one-half feet wide and twelve inches deep; for the double row hedge of the Privet the trench should be four feet in width and the same depth as for the single

row. This double row hedge makes a fine showing and should be used when our means permit it. When fully grown the top of this hedge will be six or seven feet in width. In any case the plants should be set one foot apart in the row, loose soil placed in the bottom and after the roots are covered the soil should be well treaded and firmed about them. The other hedging plants hereafter recommended, such as the Barberries, Japan Quince, Althea, Osage Orange and Buckthorn, should be treated in the same way as the California Privet.

When to Plant.—Any of the hedging plants above



mentioned can be planted during the months of March, April and the forepart of May, in the Spring, and in the months of October and November, in the Fall—one time being as good as the other providing the stock is not too far advanced.

Fertilizer.—After the hedge is planted it is desirable and beneficial to cover the ground about the plants with a liberal mulching of horse manure and about June first incorporate it with the soil.

Prune Back fully two-thirds of the top growth when the plants are first set, after which annual pruning is necessary. You can keep the hedge in any desired height and shape with the judicious use of the shears.

California Privet (*Ligustrum Ovalifolium*).—This magnificent strong growing desirable plant has become justly popular for the past few years and is now used almost exclusively for hedging purposes. The Privet has perhaps more in its favor, all things considered, than any other single shrub or plant. It is, of course, particularly adaptable for the construction of hedges, and is especially valuable for this work. It is inexpensive, hardy, easy to grow, succeeding admirably in most all soils, under the partial shade of trees, and under neglected cultural conditions. Yet while this is true, we know of no other tree or plant that will respond better and more satisfactorily to proper care and treatment. When this is granted it, the Privet will give astonishing and pleasing results. It is practically an evergreen, retaining its foliage for nine months of the year. By planting in sheltered positions and a heavy mulching of manure the Privet will not become defoliated during the entire year. We have a specimen on our place which has retained its luxuriant foliage during the past ten Winters and we enjoy it very much. The Privet can be used advantageously for many other purposes, such as clumping singly of itself and with other shrubs. It is also valuable as a screen plant to hide un-

sightly outbuildings, fences and the like; the great point in its favor is its quick growth, making from three to five feet of new wood each season. By severe pruning when first planted we force branches to grow close to the ground; a very necessary factor in a perfect Privet bush.

Its panicles of small white flowers that appear in mid-summer are quite interesting.

In Summer it is covered with rich, leathery green foliage, in mid-winter changing to a deep purple, making a very pleasing contrast with the pure white snow.

Berberis, Purpurea (Purple Leaved Barberry).—A very desirable plant for a hedge. Foliage of violet purple.

Berberis Thunbergi (Thunberg's Barberry).—A dwarf spreading species, with small white flowers in May, followed with an abundance of deep scarlet berries, which color they maintain all winter.

Cydonia Pyrus Japonica (Japan Quince).—The Japan Quince ranks among our choicest shrubs as an ornamental hedge plant.

Hibiscus Syriacus (Althea).—These shrubs can be sheared into any desired shape, and are very showy, either when the entire hedge is of one color or when assorted colors are combined. Can also be employed as ornaments on the lawn either singly or grouped with other shrubs.

Maclura Aurantiaca (Osage Orange).—The cheapest hedge plant of all. Makes a strong, durable fence; though not so ornamental as other kinds, yet when it is closely trimmed it is quite attractive.

Rhamnus Catharticus (Buckthorn).—A fine hardy hedge plant of European origin. It has dark green foliage, white flowers and small black fruit.

EVERGREEN HEDGING TREES.

The three species that follow below are the best of all the evergreens for Hedges. They should be planted in single rows, in trenches four feet in width and fifteen inches deep; the trees should be three feet apart and should be pruned back one-third at the time of planting.

When to Plant.—Evergreens can be planted in the months of April, May and June in the Spring and in August and September in the Autumn. Be sure at all times to protect the roots from the weather. Use manure about the plants the same as recommended for the deciduous hedging plants. Evergreens can be pruned to suit the individual taste, they are desirable for Hedges and we can recommend them. Further along in this work the author will have more to say about these beautiful trees.

Thuya, Occidentalis (American Arbor Vitae).—One of the most desirable evergreen hedge plants, of very attractive appearance. Although a fast grower, it can be kept trimmed to any height desired.

Picea Excelsa, (Norway Spruce).—A popular variety. Makes a very dense, compact hedge. Very desirable for a firm hedge to take the place of a fence.

Picea Canadensis (Hemlock Spruce).—Very fine, graceful and ornamental, with fine, smooth, rich foliage, making a beautiful hedge.

RHODODENDRONS.

This is universally acknowledged to be the finest and most showy hardy evergreen plant grown. The broad evergreen foliage, with its glossy richness would alone entitle it to the first rank, but when it is covered in June with clusters of flowers large enough for a bouquet, and each variety having its own color, the term superb fitly describes its appearance. They can be planted singly upon the lawn, and are also very effective when planted in masses of one or two dozen. The Rhododendrons are heavy feeders and should not be planted too closely. For their success a light garden soil is the best; if the soil is clay let it be lightened with sand, leaf mold, rotten sod or surface soil which has been heavily manured the year before—all are beneficial. It is a very great mistake to plant under shade trees; the foliage will be of a darker green, but will not flower so freely. A great many of the hardy sorts have a tendency to set too many buds and while this is an excellent quality, it is better not to let all the buds flower, but to pinch off some of them, according to the age and vigor of the plant. The seed vessels should also be broken off immediately after flowering, to insure a vigorous growth. We name hereafter a list of varieties most desirable for planting in our American climate.

Plant in holes three feet in diameter and one foot deep whether you plant in rows or in clumps. Set the plants five feet apart every way; cover the ground around the plants with manure during the winter months and protect the tops with evergreen boughs or straw.

Album Elegans.—Very large, white.

Brandyanum.—Bright cherry.

Candidissimum.—Pure white.

Everestianum.—Rosy, lilac, crimped.

Giganteum.—Large, rosy, crimson.

Gloriosum Waterer's.—Large blush.

Grandiflorum.—Rosy crimson.

Purpureum Elegans.—Fine purple.

J. R. Trumpy.—Late, rosy crimson.

Herbert Parsons.—Lilac blush, strong grower.

H. H. Hunnewell.—Very dark rich crimson.

H. W. Sargent.—Crimson, enormous truss.

Jas. Bateman.—Fine scarlet, splendid habit.

John Walter.—Rich crimson.

Kettledrum.—Deep red, very late.

Kissena.—Lavender, crimped petals, early.

Lady Armstrong.—Pale rose, very spotted.

Lady Clermont.—Rosy scarlet, blotched with black.

Lilacina.—Flushing seedling, lilac blush.

Mabel Parsons.—Rose blush, fine truss.

Maximum Album.—Large white.

Superbum.—Large rose, best of the Maximums.

Michael Waterer.—Very beautiful, late crimson.

Mrs. Holford.—Rich salmon, quite unique.
 Mrs. Milner.—Rich crimson, very fine.
 Minnie.—Blush white, with large chocolate spots.
 Amarantinora.—Large light rose color, distinct.
 Atrosanguineum.—Crimson scarlet.
 Bicolor.—Rose with white center, early.
 Blanch Superbe.—Pure white.
 Brayanum.—Vivid crimson, very showy.
 Caractus.—Rich purplish crimson.



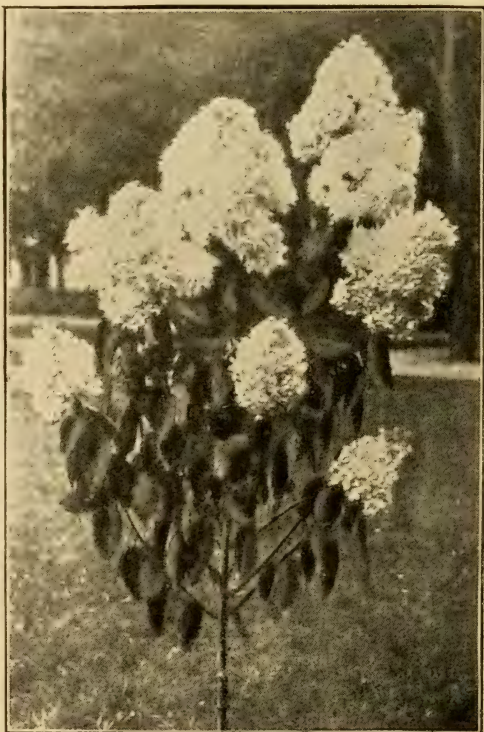
RHODODENDRON WITH BALL OF EARTH.

Chancellor... Purplish rose.
 Chas. Bagley.—Cherry red, fine truss and habit.
 Chas. Dickens.—Dark scarlet.
 Chas. Sumner.—Rose and light purple.
 Curieanum.—Dark rosy lalac, large.
 Daisy Rand.—Deep crimson.
 Delicatissimum.—White and blush.
 Dr. Torrey.—Flushing seedling, rose, early.

THE HARDY BORDER.

There is perhaps nothing so beautiful and valuable in the landscape and nothing so easily and cheaply obtained as a border of ornamental shrubs. Be your place large or small, there is always an opportunity to enrich and beautify the grounds with the judicious selection of these grateful and beautiful flowering plants. A border of this kind once planted and established lasts for nearly a life time. Comparatively speaking, the first cost is the only cost and the little necessary pruning of these shrubs each year is easily and cheaply accomplished; in fact, it is a great pleasure to those who love nature to attend to and supply the little wants of these generous shrubs. The author has several hardy

borders of flowering shrubs at his own home and perhaps gets more pleasure, satisfaction and real value from their product than from anything else in the ornamental line. There is not a single day in the season from early April until November when it is not possible for his wife or children to cut beautiful flowers and foliage from these borders. The principal border was planted fourteen years ago along in front of his place on the public highway. It seems more beautiful and the plants more grateful each succeeding year. This border is some three hundred feet in length and is planted with flowering shrubs that bloom continuously throughout the entire season. During the growing season it is the admiration of all his friends, and favorable comments can be heard most any day from the passers-by. The labor and care of keeping this border in proper condition costs less than ten dollars per year, perhaps



HYDRANGEA P. G., GROWN AS A STANDARD.

for the ordinary home it would not be necessary to have as long a planting as this, but even though the planting be reduced fully one-half

or more, the same general results can be had. In planing for the Hardy Border great care should be exercised in the selection of not only exceptionally hardy, desirable shrubs, but also of those that will bloom regularly and profusely throughout the season. The writer has thought best to aid the reader in this selection. About the first shrub to bloom in the Spring is the Bush Honeysuckle (*Fragrantissima*). This is often in bloom before the snow disappears and is closely followed by that beautiful shrub, the Japan Quince, the blossoms covering every branch and twig. Then comes the White and Pink Almonds, producing double flowers before the leaves appear. Next we have the *Thunbergi Spirea*, blooming profusely. Then the Sweet Shrub, the flowers and wood being fragrant, closely followed by the Weeping Golden Bell, which produces yellow flowers in great profusion. The Japan Snow Ball blooms about this time with its large and beautiful clusters of white flowers, followed by the Pearl Bush, producing large, white flowers along in the middle of May, and Silver Bell, another beautiful shrub with bell-shaped flowers. Then we have that beautiful family of *Spireas*, such as *Bumaldi*, *Prunifolia*, *Van Houttii* and others, that cover the entire season of bloom. and the *Weigela* in many charming varieties, all good. The Mock Orange is charming with its rich green foliage and white fragrant flowers, followed by Mountain Laurel, that beautiful native evergreen shrub with clusters of pink flowers; next is the Japan Oleaster with its beautiful silver foliage laden with fruit. Then we have that magnificent old fashioned family of *Altheas*, commonly called Rose of Sharon, which we have in all the colors, white, pink, crimson, blue and a host of other shades, each one seeming more beautiful than the other. We have that magnificent, grateful *Hydrangea*, *Paniculata Grandiflora*, the best of all *Hydrangeas*; this bears a profusion of white flowers one foot in length from mid-summer until along in November when the flowers change to pink color; they can be then cut and brought to the house and will last pretty well through the Winter. All these species of shrubs that I have specified are hardy, reliable, desirable and valuable. For full descriptions of each you are referred to pages 100-106 of this work. Under the heading of Hardy Ornamental trees we give instructions about planting these shrubs. They need annual pruning; it is best to keep them well headed back each year, studying the individual characteristics of the plants in performing this work. In forming a border we should set our shrubs six feet apart every way, which will give them an opportunity to develop properly and admit the light and air; thus giving them every advantage for best results. In the arrangement of this border we should avoid any prearranged or studied plan, locating the different species promiscuously around the border; in this way we are more apt to bring about the natural order of things, and our border will be correspondingly more unique, and consequently more beautiful and appreciated.

Where it is impossible to establish a border such as above, we can get very good and satisfactory results by grouping a few of the hardy shrubs together, and when we can make two or three of these groups we can work in a charming list of hardy flowering shrubs that will give us very gratifying results.

EVERGREEN TREES.

Evergreen trees produce an effect in ornamental planting not to be obtained in any other way. It is inexpressible how much they add to the

beauty and comfort of a country residence at all seasons of the year, particularly in the winter months, when other trees are stripped of their foliage. The advantages resulting from the planting of Evergreens are many and a most beautiful effect may be obtained by the judicious arrangement of varieties of different colors that will harmonize with the deciduous and flowering trees and shrubs you may have planted on your place. No one can help admiring the cheerful and comfortable appearance of the homes of those who have improved their grounds with the planting of



COLORADO BLUE SPRUCE.

Evergreens. In no other tree is so great care required in digging and transplanting as in the Evergreen. The great loss of so many Conifers is caused by exposing the roots to the sun and wind at times of removal and setting. Great care should be exercised in these matters if we expect good results. Evergreens require to be handled and planted very carefully as they are extremely sensitive to injury by drying; their roots should never get dry while out of the ground.

Picea Excelsa (Norway Spruce).—A popular variety. Makes a very

dense, compact hedge. Very desirable for a firm hedge to take the place of a fence; it can also be used as a specimen tree on the lawn.

Picea Alaba Aurea Variegata (Golden Variegated Spruce).—Medium growth, very handsome as a specimen tree, the foliage giving a singularly soft beautiful effect.

Picea Pungens (Colorado Blue Spruce).—One of the hardiest and beautiful of all the spruces, and is rapidly taking a prominent place among the evergreens. It is of compact habit, with an abundance of foliage of a very handsome bluish tint; retaining its handsome color throughout the entire year. Very valuable for grouping purposes and should have a prominent place on every lawn. Without doubt the choicest of all evergreen species. We can with the aid of this very handsome tree attain many beautiful effects on the home ground. It is perfectly hardy and a rapid grower, unlike many other evergreens it is an ornament when quite young and small.

Picea Elata (Elata Spruce).—Strong growth, throwing out and upward long branches in a wide spreading grotesque form. A singular and picturesque variety.

Picea Orientalis (Oriental Spruce).—Slow growth but tall, compact, straight and spiral, with deep shadows; dark, small shining green foliage. Very hardy. One of the finest of all evergreens.

Picea Alba (White Spruce).—Compact pyramidal form, of greater symmetry than that of the Norway Spruce. Very hardy.

Picea Canadensis (Hemlock Spruce).—Very fine, graceful and ornamental, with fine smooth, rich foliage, making a beautiful hedge; it is especially graceful.

Abies Balsamea (Balsam Fir).—A very erect, regular pyramidal tree, with dark green, sombre foliage. Grows rapidly and is very hardy.

Abies Nordmanniana (Nordmann's Silver Fir).—This majestic Fir, from the Crimean mountains, is of symmetrical form, vigorous and quite hardy. Its foliage is massive, dark green, shining above and slightly glaucous beneath, rendering it a very handsome tree throughout the year. Considered here and in Europe as one of the finest of the Silver Leaved varieties.

Abies Pichta (Pitch Silver Fir).—From the mountains of Siberia. A medium sized tree, of compact, conical growth, with dark green foliage. Fine and hardy.

Pinus Ponderoso (Heavy Wooded Pine).—This is also a noble tree, found abundantly on the northwest coast of America and California. It is perfectly hardy here. It is a rapid grower, the leaves 8 to 10 inches in length, and of a silvery green color.

Pinus, Austriaca (Austrian Pine).—A very remarkably robust, hardy, spreading tree; leaves long, stiff and dark green; growth rapid; valuable for this country.

Pinus Strobus (White Pine).—The most ornamental of all our native pines. Foliage light, delicate and silvery green. Flourishes in poorest of soils; valuable for grouping or as a specimen tree.

Pinus Helvetica (Swiss Stone).—A large growing variety of the preceding, hardy and effective in landscape work.

Pinus Cembra.—Perfectly erect and regularly branched from the ground to the top. Thick dark green foliage.

Pinus Sylvestris (Scotch Pine).—A fine, robust, rapid growing tree, with stout, erect shoots and silvery green foliage.

Taxus Adpressa (Short Leaved Yew).—Japan. Low, spreading, bushy form, small, dark green shining leaves, branches numerous and densely covered with foliage. Hardy and very choice.

Taxus Baccata (Common European Yew).—Large bush or tree, slow growing, with short stem and very bushy head; densely branched; thickly covered with drooping, sombre green leaves. Suitable for clipping into artificial forms. Sometimes browned in Winter.

Taxus Elegantissima (Elegant Yew).—Light straw color, especially in June; more of a dark green toward Fall; browns sometimes in Winter, but scarcely ever kills. Very rich and effective in color.

Taxus Aurea (Golden Yew).—Of a rich Golden hue. Its color in June is unsurpassed by any variegated form among evergreens.

Abies Inverta (Weeping Norway Spruce).—The foliage is larger and brighter than that of the species, the lateral branches as drooping as a Willows; as a specimen tree it is always odd and interesting.

Thuya, Occidentalis (American Arbor Vitae).—One of the most desirable evergreen hedge plants, of every attractive appearance. Although a fast grower, it can be kept trimmed to any desired height.

DWARF EVERGREENS.

Why They Should be Grown on Home Grounds.

These Dwarf Evergreens, quite all of them, too, are both desirable and interesting in the furnishing and adornment of the home grounds. In fact, we cannot get the best effect and pleasing results without them. We, of course, first need the large growing deciduous trees and evergreens for the frame work of our grounds, but for many little nooks and corners, as well as for the trimmings and finishing touches, the Dwarf Evergreens are quite indispensable, as we cannot get harmonizing effects without them. Many of these Dwarf Evergreens, like the *Retinosporos*, Pines, and *Arbor Vitae*s, are most beautiful of themselves. This is particularly so of the Pines and *Retinosporos* which can often be planted singly or in clumps to good advantage.

However, one of the grandest sights to behold is the proper selection of a quantity of the many different Dwarf Evergreens "grouped together," and so arranged that the varied characteristics of each individual member of the Dwarf Evergreen family is exposed in the best and most attractive manner. While collectively, with their many variegated sizes, shapes, forms and colors, they form such an admirable contrast that we at once become interested in them. On short acquaintance, they become our friends, then a companionship is formed, finally we fall in love with them—a love that does not "wane," as it does with many other pleasures of life, with increasing age and infirmities, rather the love that grows firmer and stronger for the beauties of nature as we grow old. Never will we forget the words of our honored and lamented President McKinley to the attending nurse while nearing his end on his death bed at Buffalo: "Please do not lower the shades I want to look out upon the beautiful trees." This, one of his last expressions, served merely to strengthen the opinions—if such a thing were needed—of the American people, regardless of political differences or affiliations, that he was a truly good and great man in every way.

How to Plant.—Dig the holes and plant in the same general way as for the standard evergreens. In clumping and grouping they can be planted from five to twelve feet apart. For illustration, the Junipers and Arbor Vitae can be planted five feet apart, while the Retinosporos and Pines should be twelve feet apart. Dwarf Evergreens need not be pruned back when planting, and in fact, need very little pruning at any time, except when we wish to form them into an unnatural shape, then we can prune accordingly and without fear of injury. The proper time to trim back evergreens of all kinds is when our knife is sharp.

BEST VARIETIES OF DWARF EVERGREENS FOR GENERAL PLANTING.

Thuya Globosa (Globe Headed Arbor Vitae).—Very dense and dwarf, forming a round ball without any trimming or training, distinct, hardy and popular.

Thuya Hoveyi (Hovey's Golden Arbor Vitae).—Of dwarf habit, globular form, dense growth, foliage of lively yellowish green.

Thuya Orientalis Aurea (Geo. Peabody Arbor Vitae).—Very hardy, beautiful and showy, of dwarf, compact habit, foliage of a rich, bright golden color.

Thuya Siberica (Siberian Arbor Vitae).—Exceedingly hardy, of rather slow growth, conical form, compact and symmetrical.

Pinus Rotundata (Dwarf Mountain Pine).—A handsome, globular variety that forms a bush 4 to 6 feet in diameter, clothed with a dense mass of soft, silvery foliage.

Pinus Mugho (Dwarf Mugho Pine).—A very distinct species; foliage short, stiff and twisted and thickly distributed over the branches. Does not grow tall, but spreads over the ground. This and the Dwarf Mountain can be grown in large tubs with good success, and can be removed from the lawn to the house in Winter.

Retinospora Plumosa Aurea (Golden Japanese Cypress).—This is a most interesting family of evergreens of dwarf habit, and particularly suited to small places. The Golden Retinosporo is one of the handsomest evergreens that can be planted in the lawn.

Retinospora Squarrosa.—An exquisite Japanese form, with steel colored foliage, which is very fine and feathery; it displays many shades of color during the season and is largely used and can be closely pruned into any shape, associating with all the other dwarf evergreens.

Pinus Compacta (Compact White Pine).—A dwarf round-headed tree, with numerous branches and soft feathery foliage. A charming variety.

Abies Picta (Siberian Silver Fir).—Medium size, leaves of darker green than ordinary Silver Firs, very soft and rich to the touch. One of the hardiest and most valuable of Firs.

Juniperus Hibernica (Irish Juniper).—Very erect and tapering in its growth, forming a column of deep green foliage. Very desirable for lawn planting. Its beauty and hardiness make it a general favorite.

Juniperus Prostrata. (Trailing Juniper).—A beautiful native species of odd, trailing growth. It is densely branched and forms wide, thick masses of delicate foliage. Useful for picturesque hillside planting.

Juniperus Suecica (Swedish Juniper).—Similar to the Irish Juniper, but a lighter golden green; forms an especially pretty and compact little column.

HARDY HYBRID PERPETUAL ROSES.

It is almost impossible to complete the adornment of the lawn without planting a bed of the Hardy Hybrid Perpetuals. Blooming as they do at intervals from June to September adds materially to their great value in the landscape. It is not necessary to be a professional to successfully cultivate this class of roses, the after culture being very simple; most any soil will do for the Rose, but it must be well drained. In preparing the Rose garden be cautious to have the soil well spaded to the depth of eighteen inches and thoroughly incorporated with one-fifth its bulk of good decomposed stable manure—cow or horse manure, or both mixed. We should have a deep loose soil for them to take their nourishment from. A grave mistake, quite frequently made in Rose planting is setting them too close together, and in doing we do not allow them sufficient soil from which to feed, consequently we get a very weak and spindling growth with insufficient organizable matter to set flower buds; at the same time we should always remember that the Rose requires sun and air, therefore do not plant them so close together that when they are covered with their luxuriant foliage we exclude the sun and prevent a free circulation of air. We recommend to plant the Hardy Hybrids three feet apart each way. Keep the soil cultivated during the Summer months, more especially during a protracted drought; frequent loosening of the soil creates moisture. It is impossible for us to say what shape of Rose beds is best to arrange; this must in all cases be governed by the surrounding landscape and individual taste, but no matter what form of bed you may decide to plant the effect and pleasure will be equally as great.

The proper method of pruning the Rose must be determined by the grower. In a general way we might say a good rule to follow is to keep each individual bush in its own peculiar form of growth; we can aid nature, but we must not try to change it. Pruning should be done in the Spring as soon as the freezing weather is over, cutting back at least two-thirds of the previous year's growth and at the same time removing any decayed wood which may be on the bush. During the Summer months cut out all weak sprouts which may appear and remove all imperfectly developed buds, thereby infusing all the vitality of the parent plant into the remaining bloom. Our experience in growing Roses, has taught us in order to keep our bushes in a healthy condition (quite necessary for the perfect development of bloom), we must spray. Having experimented with several spraying mixtures, we have had best results from a mixture of two pounds of whale oil soap to five gallons of water, which enabled us to combat successfully insects and fungous growth. We advise its use just as the buds are swelling and when in full leaf. If you notice insects during the Summer, spray again. We want to impress our readers with the necessity of getting the mixture on the under side of the foliage; this is where the mischievous little insects begin their work.



MRS. JOHN LAING.

Mulching the Rose bed in the Fall is quite frequently neglected by the ordinary grower. This should not be so. By mulching the bed with good stable manure we keep the roots warm and insure a growth of wood and flowers the following season. As soon as the ground is in condition for working we can spade this mulching in the soil which will serve as a fertilizer. Protecting the Roses with straw is not absolutely necessary, but we consider it time and money well spent in doing so. Always have them



PROTECTING THE ROSES FOR WINTER.

receive a nip of frost before covering, they will be benefitted by it. The proper way to straw the bush is shown in illustration on this page. A man can protect a large bed in a short time. The description of Roses is classed in the following manner:

Color.—The prevailing shade in the most perfect development of the flower.

Semi-Double.—With 2 to 4 rows of petals. **Double.**—Having more than 4 rows of petals, but which show the stamens when fully blown. **Full.**—When the stamens are hid.

Cupped.—Inner petals shorter than the outer ones, the latter stand erect and are generally somewhat incurved.

Globular.—Outer petals are concave with convex edges, folding richly one about the other tapering from the center.

Flat. The surface of the flower is level or nearly even, and all the petals are exposed to view.

BEST VARIETIES FOR GENERAL PLANTING.

Baroness Rothschild.—Deep rose, white tinted; very large and cup form; free bloomer; very fragrant. No rose bed is complete without it.

Mrs. John Laing.—Soft pink; large and fine form; produced on strong stems.

Paul Neyron.—Deep rose color; good tough foliage; wood rather smooth. We ask special attention to this grand rose. The flowers are immense.

Alfred Colomb.—Bright carmine, very large and fine form.

Madame Alfred Rougemont.—An excellent white rose; very hardy and vigorous.

Madame Chas Wood.—Reddish crimson; large handsome flowers free bloomers. Especially fine for bedding in masses.

Ulrich Brunner.—Bright cherry red; very large and full; strong grower.

Giant of Battles.—Has stood the test for over fifty years. It bears large, double, bright crimson flowers.

Gen. Jacqueminot.—This reliable old rose is too well-known to be given any lengthy description. Years of endeavor have failed to find a variety to surpass this grand old rose. Flowers very double and bright crimson.

American Beauty.—This is perhaps the grandest and best known rose. It is a bushy grower, free bloomer; color, a rich, rosy crimson, and beautifully veined.

Coquette Des Alpes.—Large, pure white flowers sometimes tinged with pale blush; very hardy and beautiful.

Dinsmore.—One of the finest bloomers. Highly recommended for garden planting on account of its hardiness and vigorous growth. Flowers are large and double; rich scarlet; very fragrant.

Louis Vanhoutte.—Brilliant vinous crimson; large, full and fragrant. An excellent sort.

Madame Masson.—We think it is one of the very finest roses in existence for garden cultivation; color, clear bright rose; distinct and charming.

Margaret Dickson.—This is unquestionably the finest Hybrid Perpetual white rose yet introduced.

Maria Rady.—Clear bright red, large, full flowers; fragrant.

Pius the Ninth.—Bright purplish red, changing to violet; very large and full; one of the best.

President Lincoln.—Dark crimson; a most prolific bloomer; hardy and good grower.

La France.—One of the most beautiful constant blooming Hybrid Perpetual Roses. The flowers and buds are of immense size and specially fine form; a lovely shade of peach bloom changing to rose, deliciously fragrant. It commences to bloom soon after planting and continues all Summer to offer its magnificent flowers.

Captain Christy.—Light salmon, flesh color; large and fine form, free bloomer.

Anna De Diesbach.—This superb variety is of a clear carmine color, large full and cupped.

Marchioness of Londonderry.—Flowers of great size, measuring five

inches across, perfectly formed and carried on stout stems. Color, ivory white; free flowering; highly perfumed.

Caroline de Sansal.—A lovely pale, flesh colored rose.

Her Majesty.—An English rose of the best type; fragrant.

Annie Wood.—Vermillion; very fragrant.



MAGNA CHARTA.

Madame Plantier.—Not a Hybrid Perpetual Rose, but perfectly hardy. One of the best white roses and should be among every collection.

Magna Charta.—Large, full and globular. Bright pink flowers. Can be relied upon as a standard sort. Very fragrant.

John Hopper.—Rosy crimson, back of the Petal lilac. Large and full and one of the best roses.

Prince Camille de Rohan.—Deep velvety crimson; large, moderately full. A splendid rose.

Fisher Holmes.—Deep glowing crimson; large, moderately full, and of fine imbricated form. A superb rose.

Madame Joly.—Rose color, medium size; fragrant and good shape.

Madame Joseph Desbois.—Flesh white, shaded with salmon rose; very large, well formed; very vigorous. A superb rose.

Madame Victor Verdier.—Carmine crimson; large, full, very fragrant; excellent.

Marchioness of Dufferin.—Large, beautifully rosy pink, suffused with yellow at base of petals.

Madame Gabriel Luizet.—Pink, distinct, very large, cupped shape.

Baron de Bonstetten.—Rich velvety maroon; large, full. A splendid sort.

Alphonse Soupert.—Large, very handsome and showy; bright rose color. A fine rose.

General Washington.—Bright red with crimson shade, large, flat form.

Marshal P. Wilder.—Flowers large, semi-globular, full, well formed; color, cherry carmine.

Mrs. R. G. Sharman Crawford.—Color deep rosy pink, outer petals shaded with pale flesh; flowering from early Summer until late in the Autumn.

Jubilee.—It is the finest dark red, hardy garden rose yet introduced.

Clio.—This variety is of a very vigorous growth. Flowers flesh color freely produced.

Gloire Lyonnaise.—This grand rose is a pale shade of chamois or salmon yellow. The flowers have all the beauty of Tea Roses.

TEA AND HYBRID TEA ROSES.

This class of roses can be wintered safely. All that is necessary is to give them the same protection as the Hardy Hybrids.

The Tea Rose may be well taken as a synonym for all that is delicately beautiful. What refinement of color, what subdued yet powerful fragrance do they possess! They may justly be called the sweetest of all roses. The flowers, many of them, are large and very delicate in their shades of colors, such as white, straw, salmon and various tints of rose combined with these. While as a rule they are inferior to the Hybrid Perpetuals in brilliancy of color and fullness of flower, the distinction between the varieties is equally marked, and for bouquets and cut flowers they greatly excel all other classes. Like other tender roses their flowers improve in quality as the season advances, and reach perfection in Autumn. In judging the merits of a Tea Rose we do not always consider fullness of flowers a requisite. A Hybrid Perpetual is nothing if not at least moderately full, but some of our most valued Teas have but few petals, and are comparatively single.

Clothilde Soupert.—Medium size; very double and beautifully imbricated like an aster; produced in clusters; pearly white with rosy lake centers; of easy culture. One of the most valuable of recent introduction.

Meteor.—Rich, dark, velvety crimson, retaining its color well; a constant bloomer, healthy, with no tendency to mildew; admirable for forcing.

Bride.—A sport from Catharine Mermet. Pure white, large, fine form, very fragrant, free bloomer, admirably adapted for forcing.

Bridesmaid.—A new sort which has proved a valuable acquisition; it is a sport of Mermet and is similar to that admirable variety in every respect, save in color, it being a deeper and clearer pink. There is no question as to the value of this introduction.

Catherine Mermet.—Bright flesh color, with the same peculiar silvery lustre possessed by La France; large, full, and of beautiful form; when the flowers expand they yield a delightful perfume; decidedly one of the finest Teas.

Kaiserin Augusta.—An extra fine white variety faintly blended with cream color; very large, full and double, almost perfect in form and it continues beautiful even when fully expanded. Its fragrance is a combination of tea and magnolia, and is very delightful and distinct from that of any other variety. Beautiful glossy foliage; a vigorous grower and very free flowering, blooming at every shoot.

White Maman Cochet.—A sport from that grand sort, Maman Cochet, with which it is identical in every respect but color. It is a beautiful snow white, sometimes tinged with the faintest of blush. An extraordinary rose.

Perle des Jardins.—Clear yellow, free bloomer, very fragrant, one of the best of the Teas.

RAMBLER ROSES.

This is the most remarkable group of Roses introduced for many years. They are varieties of extraordinary value, notably the Crimson and Yellow Ramblers. Among climbing roses these are most beautiful for the adornment of pillars, trellis, arbors, or for covering porches or the ends of houses. In their blooming season they are fairly covered with lovely flowers, and they are very much valued by all planters of roses, being perfectly hardy and of vigorous growth. Their successful culture offers no obstacles even to the inexperienced; always free from disease and insects.



CRIMSON RAMBLER.

Crimson Rambler.—This is truly a remarkable and unlooked for novelty among Hardy Climbing Roses. It is a vigorous, rapid grower, making shoots 10 to 20 feet in height in one season. When grown as a bush it is equally desirable. In Japan, where it originated, Crimson Rambler is known as the Cherry Rose, so bright are its flowers. No yard or garden should be without the Crimson Rambler.

Yellow Rambler.—This is the only hardy Yellow Climbing Rose in cultivation. It is perhaps a more important introduction than its renowned relative, Crimson Rambler, with which it is identical, with the exception of the flowers, which are deep golden yellow.

White Rambler.—This is a splendid rose; distinct and valuable; the flowers are pure white and very fragrant; they are borne in clusters, and a well established plant in bloom makes a striking appearance.

Pink Rambler.—Possesses the same valuable features found in the White Rambler, except in color of flower, which is a brilliant light carmine; perfectly hardy.

HARDY RUNNING OR CLIMBING ROSES.

When it is desired to cover walls, unsightly buildings, etc., with roses, none will be found to do this work so efficiently as this class of rose.

Baltimore Belle.—Pale blush, becoming nearly white; compact and

fine; the blooms are produced in clusters, the growth, though rapid, is slender and graceful.

Queen of the Prairies.—Bright, rosy red, frequently with white stripes, fairly covered with flowers in early Summer, and is one of the best climbers for any purpose.

Seven Sisters.—A small blush rose, tinged with various shades of pink.

Empress of China.—Without exception one of the most valuable and popular roses now offered; the color is soft dark red, changing to lighter red or pink, like the color found in an apple blossom.

White Marechal Niel.—The fame of this rose is too well known to need any great praise; it is the exact counterpart of its parent, Marechal Niel, save the color of its flowers, which are pure white; totally distinct.

Dorothy Perkins was originated from seed of the variety *Rosa Wichuraiana*, hybridized with pollen from that grand old rose, *Mme. Gabriel Luizet*. The seed parent was chosen for its hardiness and vigorous habit of growth, the pollen parent for its beautiful color.

The plants are perfectly hardy, having withstood a temperature of 20 below zero uninjured. The flowers are of large size for this class of rose; usually about one and one-half inches across; are borne in clusters of ten to thirty. The buds are remarkably pretty, just the right size for the button-hole. Plants are strong, vigorous growers. The foliage is deep green of thick leathery texture. It is almost an Evergreen variety.



TREE ROSES.

These beautiful novelties are without question the most pleasing and beautiful of anything ever offered in the rose line. There is nothing in the history of floriculture that is more beautiful than the Tree Rose. The Tree roses are budded from three and a half to four feet from the ground, thus forming a beautiful small tree. With proper care, pruning and cultivation they succeed well. Are grown in all the principal varieties of Hardy Hybrid Perpetuals.

WICHURAIANA ROSES.

This most distinct and hardy rose has been found to be one of the most useful roses, from its being essentially unique in its manner of

growth and in its general appearance. Its habit of growth is one of its most remarkable features, as the shoots are prostrate in habit, and extend from 10 to 15 feet in a single season, covering the ground densely. The leaves are dark green and lustrous. The effect of this foliage, forming a close mat over the ground, is greatly enhanced by the flowers, which appear about the middle of July, and are irregularly borne during the remainder of the season.

Wichuraiana (White Memorial Rose).—This, the pretty parent type, has clusters of white, single flowers, followed by red berries. It blooms a long time in mid-summer.

Pink Roamer.—Single flowers of bright rich pink.

RUGOSA ROSES.

These handsome Ramonas or Rugosa Roses still maintain the prestige to which their admirable qualities entitle them. They are rapid growers of neat, uniform, compact and sturdy habit, attaining a height of 5 to 6 feet; perfectly hardy. The foliage exhibits a mass of dense, luxuriant, glossy green. The flowers are large and single; perfect form and color; produced continuously throughout the season and until late in the autumn and as they mature, are replaced by small glossy, golden and red haws; they possess a character all their own and are of valuable assistance to the landscaper. By their use he is enabled to make unsightly nooks and corners beautiful. A very important characteristic they possess is that of being free from the attacks of rose insects.

Rugosa Alba.—A species from Japan. Single pure white flowers, of five petals; highly scented; golden fruit.

Rugosa Rubra.—Japan variety. Flowers single, of a most beautiful bright rosy crimson, succeeded by large berries, of a rich rosy red color, and are a great addition to the ornamental character of the plant.

HARDY CREEPING VINES.

We cannot successfully adorn the home grounds without employing some species of this family. They can be used to advantage for so many purposes. The varieties we describe require no special soil and are all perfectly hardy. The after culture of Hardy Creeping Vines is very simple—an occasional dressing of manure and loosening of the soil is all that is necessary. Holes should be dug for these vines three feet in width and twelve inches deep. Rich soil should be worked between and over the roots and firmly treaded, then tie the vine to a stake or trail it to any thing you wish.

HONEYSUCKLE.

This is one of the grandest, most cheerful and interesting of the family of climbing vines. If we were restricted to but one flowering plant or vine we should select the Honeysuckle. It begins blooming early in June and continues to produce beautiful, fragrant white and yellow flowers right up to severe winter weather. In addition to this continuous

flowering, it has a most magnificent foliage of rich, handsome, glossy green. In fact, we consider this fully as valuable and interesting as the flowers. One who has a few vines of the Honeysuckle is always prepared to make their room cheerful. We believe it is going to become the most prominent climbing vine. It can be trained to climb all over the piazza, to which it adds great beauty. Retaining its foliage until February makes it very desirable for winter landscape.

Lonicera Halleana (Hall's Japan).—An almost evergreen honeysuckle of the greatest value, being entirely hardy, and of strong, vigorous growth. The flowers are exceedingly fragrant, of pure white, changing to yellow. Blooms here from June to September.

Lonicera Aurea Reticulata (Japan Gold-Veined).—A beautiful variety, of moderate growth. This variety is especially desirable on account of its beautiful winter foliage. Flowers large and peach colored. Blooms in June and July.

Lonicera Punicera (Scarlet Trumpet).—A well-known, strong, growing vine; continuous bloom; flowers scarlet, succeeded by red berries; suitable for stump and trellis.

Lonicera Sempervirens (Monthly Fragrant or Dutch Honeysuckle).—Showy flowers of red and yellow, delightfully fragrant; continues to bloom a long time. Season June and July.

Ampelopsis Veitchii (Boston Ivy).—Probably no climber has been so generally used for the last few years. The leaves of this beautiful climber overlap one another closely, changing in the Fall to the most beautiful tints, remaining so until they drop. It clings to wood, stone or brick, requiring no other support than a smooth surface, to which it clings with tenacity. The most unsightly buildings are made picturesque by its use. Many residences are covered with it, to which it lends an air of elegance.

Ampelopsis Quinquifolia (American Ivy or Virginia Creeper).—Very well-known and appreciated; of luxurious, vigorous growth, and owing to its ivy-like tendrils, valuable for covering unsightly objects.

Hedera Helix (English Ivy).—The ivy, being an evergreen not very hardy and suffering from exposure to the winter sun, should be planted on the north side of buildings or walls. It is very effective grown in pots for inside decoration.

CLEMATIS.

Jackmanni.—The pioneer of the large flowered, improved Clematis, and with few, if any equals, and no superiors. Vigorous, perpetual, very profuse and constant. Flowers purple and large.

Jackmanni Alba.—Similar to the preceding in all respects, except that the flowers are pure white.

Henryi.—One of the best of the lanuginosa type, and the best White Clematis. Flowers occasionally during Summer and early Autumn.

Paniculata.—This is a recent Japanese introduction and one of the finest additions to our hardy climbers. It is a very strong, vigorous plant, growing rapidly, and as easily grown as the Honeysuckle. Flowers pearly white.

Coccinea.—Very handsome, hardy climber, bearing bell-shaped red flowers from June until frost.

Crispa (Crisped Leather Flower).—July to September. Flowers

singly on long stalks, abundant, $1\frac{1}{2}$ inches long, lilac purple, and delightfully fragrant. One of the best.

Flammula (Sweet-Scented Clematis).—Masses of small, white, very fragrant flowers from June until September. Very beautiful.

Virginiana.—A strong climber, with dark green foliage and pretty white flower; the bunches of seeds have long, woolly tufts, making them very ornamental for Winter decoration.

WISTARIA.

This is one of the most popular of our hardy vines, growing very rapidly, climbing to a height of 50 feet or more. When in bloom it is truly magnificent. It flowers in early Spring resembling in size and shape a bunch of grapes.

Wistaria Sinensis (Chinese Blue).—The flowers are of a pale blue color, and are borne in pendulous racemes in May and June.

Wistaria Alba (Chinese White).—Very like the Chinese Blue, except that the flowers are white and remain longer.

Wistaria Flore Pleno (Chinese Purple).—Blooms in the Spring in short, dense clusters; flowers pale blue.

AKEBIA QUINATA

A perfectly hardy, fast growing Japan vine, with magnificent foliage, producing flowers in large clusters of chocolate purple color; possessing a most delicious perfume; unsurpassed for covering trellises and verandas, the foliage never being attacked by insects.

Actinidia Polygama.—A climbing plant from Japan. The flowers are white with a purple center, and sometimes cover the whole vine. The fruit is round, edible and has a fine flavor.

BIGNONIA OR TRUMPET FLOWER.

Tecoma Radicans (American Climbing Trumpet Vine).—A splendid hardy, climbing plant, with large, trumpet-shaped scarlet flowers in August.

Tecoma Atrosanguinea (Dark Red, or Purple Trumpet Flower).—A vigorous shrub with purplish crimson flowers.

ARISTOLOCHIA.

Aristolochia Siphon (Dutchman's Pipe).—A native species of rapid growth, with magnificent light green foliage and curious pipe-shaped yellowish brown flowers; very valuable for trellis work. It can also be grown to trail on the veranda and makes a beautiful sight when in bloom.



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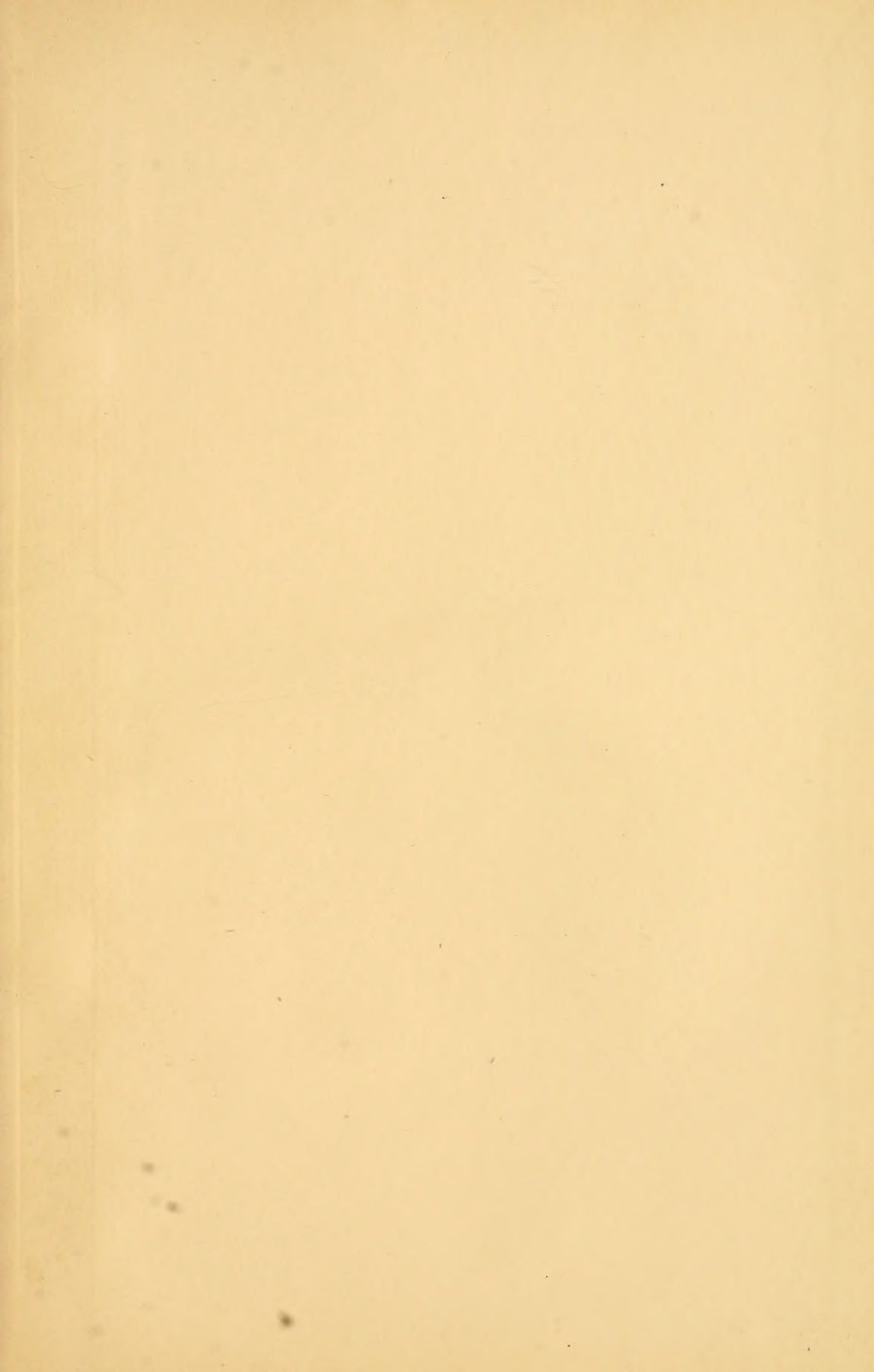
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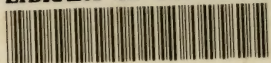
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